

# **Staff perceptions of patient safety within three Ambulance Service NHS Trusts in England: an exploratory qualitative study**

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for the degree of Doctor of Philosophy

**Edge Hill University**

## **Declaration**

This thesis is entirely my work and has not been submitted, in full, or part, for the award of a higher degree at any other educational institution. Sections of the thesis have already been published, presented at a conference, or are under consideration for publication, with details listed below:

## **Conferences**

SHEPARD, K., 2017. Poster Presentation: "Getting Worse": An Exploration of the Perceptions of Patient Safety in Three NHS Ambulance Service NHS Trusts in England: Postgraduate Research Student Symposium at Edge Hill University, 17th May.

SHEPARD, K., 2017. Oral Presentation: "It's an evolution rather than a revolution": An Exploration of the Perceptions of Patient Safety in the NHS Ambulance Services: Public Health PhD Symposium at the Public Health Institute at Liverpool John Moores University, 5th July.

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SHEPARD, K., 2017. In the future your ambulance could be driverless. The Conversation [online].

SHEPARD, K., 2018. Interview. In: Roger Phillips. BBC Radio Merseyside. 12 April. 13:00 hrs.

SHEPARD, K., 2018. Sore throats and false nails – the ambulance call-outs that cost millions. The Conversation [online].

SHEPARD, K., 2019. Exploring the perceptions of patient safety in the NHS Ambulance Services. For Inquisitive Minds [online]. Available from: <https://anchor.fm/fim/episodes/10-Exploring-the-perceptions-of-patient-safety-in-the-NHS-ambulance-services-e3vt2j> [Accessed 2 September 2019].

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## **Dedication**

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I want to dedicate this thesis to every member of staff in the National Health Service, who all perform impossible jobs to keep us alive and healthy while people like me do the easier jobs behind a desk. Thank you for everything that you do.

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## Preface

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I feel that it is essential to begin by detailing how I came to undertake this particular PhD study, as I believe that providing some background information will help the reader position and situate this study against my background and past experiences. Ever since I completed my master's in public health, where I conducted a small qualitative research project investigating the perceptions of health literacy by interviewing parents navigating a paediatric unit, I knew that I wanted to pursue a career in health research. While finding a suitable PhD studentship following graduation proved difficult, I found work at the National Institute for Health Research (NIHR), where I gained a deep understanding of the funding process behind large-scale research. It was incredibly exciting to help facilitate the application process for prospective projects, as well as to read reports detailing the beneficial impact on health that finished projects had demonstrated. I was in awe of the brilliance of the teams behind these research projects, and reading their reports impassioned me to try to follow in their footsteps where I could have a positive impact outside of a clinical capacity. However, it was clear that my role at NIHR was not going to teach me the necessary skills or give me the qualifications required to become an academic researcher, which would then allow me to contribute to these research projects, and so I kept searching for available PhD studentships.

I should clarify that I am not a clinician, nor do I have any background in the NHS Ambulance Services. My undergraduate degree was in business and my only previous jobs before NIHR was at an organic vegetable farm out in the Hawaiian island of Maui, as well as Planned Parenthood, a sexual health clinic in the United States of America. In 2016, I found an advertisement for a PhD at Edge Hill University, where it asked applicants to rate several projects on a sliding scale of preference. I have always viewed a PhD as a necessary process for developing your knowledge and skills as an academic researcher, regardless of the particular topic within a discipline. Therefore, instead of basing my choice on the specific research focus of the available PhD projects at Edge Hill University, I chose to rank this project above the others based upon the strength of the supervisory team, as well as the fundamental lack of literature in the ambulance and emergency services as emphasised within the post. Despite minimal experience in research and an unfamiliarity with the topic, I was ultimately successful and began this PhD study in September 2016.

While I initially viewed the actual process of undertaking a PhD as more important than the specific topic area, including the challenges, mistakes and problems encountered along the way; at the start, I grew slightly concerned. Throughout the first month, I would routinely hear colleagues and other university staff members discuss how it is impossible for someone to finish a PhD if they were not passionate about the subject. It quickly became apparent that many of my fellow graduate teaching assistants (GTAs) were pursuing projects they felt an intimate connection to, either by a family member suffering from a specific disease, or something related to their former role as a clinician, for example. As a neophyte researcher investigating an area utterly unrelated to my background, the words of my colleagues started to worry me, and I was routinely anxious that I had chosen the wrong project.

However, despite this immediate regret, as soon as I immersed myself in the literature, my interest in the NHS Ambulance Services and this topic took hold, and my concerns around my motivation began to lessen. As an area without much previous emphasis, I realised that the onus was on me to do this study justice and to provide foundational work which would inform and guide future research. While I felt inspired by the literature, which broadened my early understanding and helped guide the development of the study, it was only during the process of data collection, where I interviewed 44 participants, when my interest in the research surged. Throughout recruiting, scheduling and conducting interviews, I met a countless number of smart, talented and kind staff in the NHS Ambulance Services who all demonstrated a deep passion for their work. I was astonished by their collective brilliance and compassionate nature, and in the end, I feel incredibly grateful for finding this project and hope that I am doing them justice with the final product.

It was partly due to my neophyte perspective and the personal experiences outlined above which led me to adopt the methodology based upon the principles of generic qualitative inquiry, and the absence of literature in this area informed the exploratory approach and research question. As reflexivity is a prominent feature of this study, it was considered essential to emphasise my lack of a clinical background and zero previous experience within the NHS Ambulance Services, as well as detail the events leading to undertaking this study, all of which ultimately had an impact on my approach.

## Abstract

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### Background:

Research exploring the perceptions of patient safety has been conducted in hospitals and primary care settings, while it is mostly absent in the ambulance and emergency services. Exploring staff perceptions of patient safety is essential as it can highlight their concerns and priorities, providing an understanding of issues they consider significant and necessary to support the development of research, policy, education and practice. This study aimed to gain insight into the perceptions of staff across all organisational levels and in multiple Ambulance Service NHS Trusts in England.

### Objectives:

- 1.) To explore the meaning of 'patient safety' to staff within three Ambulance Service NHS Trusts in England, and how this differs between NHS Trusts and organisational levels.
- 2.) To investigate staff perceptions of risks to patient safety.
- 3.) To explore staff perceptions of reporting patient safety incidents within the NHS Ambulance Services.

### Methods:

An exploratory generic qualitative approach was adopted utilising semi-structured interviews to capture the perceptions of patient safety from staff in three Ambulance Service NHS Trusts in England. Fourteen to fifteen participants across three distinct organisational levels (operational, management and executive) represented each NHS Trust, with forty-four interviews conducted in total. The Framework Method was used for the analysis of the large qualitative dataset.

### Findings:

Five overarching themes emerged from the interviews with participants, including *Varied Interpretation of Patient Safety*, *Significant Patient Safety Risks*, *Reporting Culture Shift*, *Communication* and *Organisational Culture*, representing the overall staff perceptions of patient safety in the NHS Ambulance Services. It was evident that the perceptions of patient safety varied between different organisational levels but was largely consistent within these levels across all three Ambulance Service NHS Trusts.

**Conclusion:**

The findings demonstrate that participants believe the NHS Ambulance Services are becoming safer for patients, thereby indicating an awareness of some of the historical issues with patient safety and the steps taken to address them. In particular, the perception that the reporting culture had improved substantially in recent years, was of the most notable and had not been captured in any similar research. The inclusion of several levels of staff and three distinct NHS Trusts provided an in-depth understanding of the perceptions of patient safety in the NHS Ambulance Services. Given the consistency of the responses across organisational levels and NHS trusts, the identified issues from this study may be generic and applicable to other ambulance and emergency services.

**Key Words:**

Perceptions, patient safety, National Health Service, NHS, ambulance services, paramedics, healthcare staff, generic qualitative inquiry.

## Abbreviations

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<b>A&amp;E</b>	accident and emergency
<b>AACE</b>	Association of Ambulance Chief Executives
<b>AHRQ</b>	Agency for Healthcare Research and Quality
<b>ALS</b>	advanced life support
<b>CAA</b>	Civil Aviation Authority
<b>CASP</b>	Critical Appraisal Skills Programme
<b>CAT</b>	Critical Appraisal Tool
<b>CCG</b>	Clinical Commissioning Groups
<b>CDSS</b>	Computer Decision Support System
<b>CINAHL</b>	Cumulative Index to Nursing and Allied Health Literature
<b>COREQ</b>	Consolidated criteria for reporting qualitative research
<b>CPSI</b>	Canadian Patient Safety Institute
<b>CQC</b>	Care Quality Commission
<b>DoH</b>	Department of Health
<b>EBP</b>	evidence-based practice
<b>ECP</b>	emergency care practitioner
<b>ED</b>	emergency department
<b>EEAST</b>	East of England Ambulance Service NHS Trust
<b>EHU</b>	Edge Hill University
<b>EMAS</b>	East Midlands Ambulance Service NHS Trust
<b>EMD</b>	emergency medical dispatcher
<b>EMS</b>	emergency medical services
<b>EMS-SAQ</b>	Emergency Medical Services - Safety Attitudes Questionnaire
<b>EMT</b>	emergency medical technician
<b>EOC</b>	emergency operations centre
<b>ePRF</b>	electronic patient report form



<b>EU</b>	European Union
<b>FREC</b>	Faculty of Health and Social Care Research Ethics Committee
<b>GP</b>	general practitioner
<b>GT</b>	grounded theory
<b>GTA</b>	graduate teaching assistant
<b>HEMS</b>	helicopter emergency medical services
<b>HRA</b>	Health Research Authority
<b>HSPSC</b>	Hospital Survey on Patient Safety Culture
<b>ICPS</b>	International Classification for Patient Safety
<b>IHI</b>	Institute for Healthcare Improvement
<b>IOM</b>	Institute of Medicine
<b>IPA</b>	interpretative phenomenological analysis
<b>IT</b>	information technology
<b>JCAHO</b>	Joint Commission on Accreditation of Healthcare Organizations
<b>JRCALC</b>	Joint Royal Colleges Ambulance Liaison Committee
<b>LAS</b>	London Ambulance Service NHS Trust
<b>LMIC</b>	low and middle income countries
<b>MaPSaF</b>	Manchester Patient Safety Framework
<b>MTS</b>	Manchester Triage System
<b>NAO</b>	National Audit Office
<b>NAS</b>	National Ambulance Service
<b>NEAS</b>	North East Ambulance Service NHS Foundation Trust
<b>NPSA</b>	National Patient Safety Agency
<b>NRLS</b>	National Reporting and Learning System
<b>NWAS</b>	North West Ambulance Service NHS Trust
<b>NHS</b>	National Health Service
<b>PhOEBE</b>	Pre-Hospital Outcomes for Evidence Based Evaluation
<b>PPI</b>	Patient and Public Involvement

<b>PRF</b>	patient report form
<b>PSI</b>	patient safety incident
<b>PTS</b>	Patient Transport Service
<b>RIB</b>	routine information bulletin
<b>SAQ</b>	Safety Attitudes Questionnaire
<b>SCAS</b>	South Central Ambulance Service NHS Foundation Trust
<b>SECamb</b>	South East Coast Ambulance Service NHS Foundation Trust
<b>SOL</b>	shortage of occupation list
<b>SWASFT</b>	South Western Ambulance Service NHS Foundation Trust
<b>UK</b>	United Kingdom
<b>USA</b>	United States of America
<b>WMAS</b>	West Midlands Ambulance Service University NHS Foundation Trust
<b>WHO</b>	World Health Organization
<b>YAS</b>	Yorkshire Ambulance Service NHS Trust

## Definitions

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### **Advanced Paramedic**

*'An advanced paramedic is an experienced paramedic who has undertaken, or is working towards a master's degree in a subject relevant to their practice. They will have acquired and continue to demonstrate an expert knowledge base, complex decision making skills, competence and judgement in their area of advanced practice.'* (College of Paramedics, 2017)

### **Blame Culture**

*'a set of norms and attitudes within an organization characterized by the unwillingness to take risk or accept responsibility for mistakes because of the fear of criticisms or management admonishment.'* (Khatri, Brown and Hicks, 2009, p. 314)

### **Call-handler**

*'staff providing the first point of contact for a caller dialling the 999 ambulance service. A call-handler documents the reason for the call and uses triage software to decide on the response needed. Ambulance services in England use a range of labels for these staff'* (O'Cathain et al., 2018, p. xvii)

### **Clinical Judgement**

*'the result of clinical thinking or clinical reasoning to reach a conclusion following a process of observation, reflection and analysis of observable or available information or data in order to make an informed clinical decision.'* (van Graan, Williams and Koen, 2016, p. 35)

### **Consultant Paramedic**

*'A consultant paramedic is an expert practitioner undertaking a role that encompasses all four quadrants of the paramedic career framework. They are holistic and strategic practitioners who have developed and expanded their scope of practice beyond that required of an advanced paramedic. Consultant paramedics are typically able to demonstrate a broad range of knowledge and skills to a higher level of autonomy and criticality in all areas of paramedic practice. Consultant paramedics will likely practice clinically whilst undertaking other specific duties that draw upon their individual expertise. These individuals will be in senior positions within their organisation.'* (College of Paramedics, 2017)

### **Datix®**

An electronic system for incident reporting and the management of data of reported incidents in healthcare organisations.

<b>Deskilling</b>	<i>'Decrease in the quality and range of the practical knowledge of individuals, organizations, or societies due to attrition, automation, computerization, downsizing, lack of learning opportunities, or neglect.'</i> (Business Dictionary, 2019).
<b>Dispatch</b>	<i>'Allocation of the ambulance service resources to cover the demands placed on the service.'</i> (Fisher et al., 2015, p. xvii)
<b>Emergency Medical Technician</b>	A care provider who can work alongside paramedics, as well as can respond to patients alone. Typically have less training than paramedics and are less capable of complex care and treatment.
<b>Emergency Operations Centre</b>	<i>'The physical facilities housing the call-handlers who dispatch ambulances and the clinical staff who offer telephone advice.'</i> (O'Cathain et al., 2018, p. xvii)
<b>Human Factors</b>	<i>'environmental, organisational and job factors, and human and individual characteristics, which influence behaviour at work in a way which can affect health and safety.'</i> (Health and Safety Executive, 1999, p. 5)
<b>Just Culture</b>	<i>'learning cultures that provide a safe haven in which errors may be reported without the fear of disciplinary action in events where there was no intent to harm.'</i> (Kaplan and Fastman, 2003, p. ii69)
<b>Learning Culture</b>	<i>'a culture that supports an open mindset, an independent quest for knowledge, and shared learning directed toward the mission and goals of the organization'</i> (Corporate Executive Board, 2018)
<b>Learning Organisation</b>	<i>'an organisation which facilitates the learning of all of its members and continuously transforms itself.'</i> (Peler, Boydell and Burgoyne, 1989, p. 2)
<b>Newly Qualified Paramedic</b>	Paramedics who have completed training as a student paramedic, but have to then undertake a consolidation period of learning and training for up to two years.
<b>NHS 111</b>	<i>'A national telephone-based service in England offering urgent health-care advice, operating 24 hours a day, 365 days a year.'</i> (O'Cathain et al., 2018, p. xvii)

<b>NHS 999</b>	Telephone service in England, which offers an emergency medical response for patients in situations that are life threatening.
<b>NHS Pathways</b>	<i>'a clinical tool used for assessing, triaging and directing contact from the public to urgent and emergency care services such as 999, GP out-of-hours and NHS 111'</i> (NHS Digital, 2018)
<b>Non-conveyance</b>	<i>'The decision not to convey a patient from the scene to a hospital or other health-care provider facility.'</i> (Fisher et al., 2015, p. xvii)
<b>Organisational Culture</b>	<i>'the visible and less visible norms, values and behaviour that are shared by a group of employees which shape the group's sense of what is acceptable and valid'</i> (Wilson, 2001, p. 356)
<b>Patient Safety</b>	<i>'the prevention of harm to patients'</i> (Aspden et al., 2004, p. 5)
<b>Patient Safety Culture</b>	<i>'the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management.'</i> (Health and Safety Commission, 1993)
<b>Patient Safety Incident</b>	<i>'any unintended or unexpected incident which could have, or did, lead to harm for one or more patients receiving healthcare'</i> (NHS Improvement, 2017a)
<b>Patient Transport Service</b>	A service dedicated to transporting patients to and from healthcare facilities in non-emergency situations.
<b>Reporting Culture</b>	Reporting culture refers to the collective perceptions and attitudes of health professionals towards reporting incidents and raising concerns within an organisation.
<b>Research Paramedic</b>	A paramedic who assists in coordinating the research activities being undertaken within their Ambulance Service NHS Trust.
<b>Safety Climate</b>	<i>'psychological characteristics of employees (i.e. 'how people feel'), corresponding to the values, attitudes, and perceptions</i>

*of employees with regard to safety within an organisation.'*  
(Health & Safety Executive, 2005, p. iv)

**Senior Paramedic**

Higher-level paramedics in supervisory roles related to patient safety and clinical quality - role represents the first step to becoming a consultant paramedic.

**Systems  
Thinking**

*'an enterprise aimed at seeing how things are connected to each other within some notion of a whole entity.'* (Peters, 2014, p. 1)

**Triage**

*'The process of determining the priority of patients' treatments based on the severity of their condition.'* (Fisher et al., 2015, p. xvii)

## Organisation of the Thesis

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The thesis is divided into seven individual chapters, and the table below demonstrates the organisation of each in regards to the overall structure. A more in-depth description of each of the seven chapters is provided following the table.

**Table 1: Organisation of the Thesis**

Thesis Organisation and Structure	
<b>Chapter One</b>	Introduction
<b>Chapter Two</b>	Literature Review
<b>Chapter Three</b>	Methodology and Methods
<b>Chapter Four</b>	Findings
<b>Chapter Five</b>	Discussion
<b>Chapter Six</b>	Strengths, Limitations and Recommendations
<b>Chapter Seven</b>	Reflections of the Researcher

### **Chapter One - Introduction:**

The Introduction Chapter introduces the study and contextualises the research by providing a comprehensive background of patient safety in the ambulance and emergency services. The problems facing the NHS Ambulance Services and their potential impact on patient safety, including the lack of research, are identified to emphasise the significance of the study and what gaps will be addressed.

### **Chapter Two - Literature Review:**

The Literature Review Chapter describes the methods of the review before synthesising and critically appraising the content, arguments and methodological approaches found in the identified literature. This chapter will contextualise the study within the broader literature landscape both in the United Kingdom, as well as overseas, before then summarising the gaps to highlight the significance and need for research in this area. The chapter concludes with the research aim, question and objectives for this study, all of which were directly informed by the findings of the narrative review.

### **Chapter Three - Methodology and Methods:**

The Methodology and Methods Chapter identifies and provides justification for the ontological and epistemological perspectives of the researcher, the adopted methodological approach and selected methods of data collection and analysis. Furthermore, the sampling and recruitment of participants are also covered in this chapter, as well as research quality, reflexivity, ethical considerations and data management.

### **Chapter Four - Findings:**

The Findings Chapter describes the characteristics of participants involved in the research, as well as presents the findings of the 44 semi-structured interviews conducted with staff across three organisational levels in three Ambulance Service NHS Trusts in England. The findings include dominant themes and subdominant themes that encompass the experiences, perceptions, verbatim quotes and storied accounts of the participants, reflecting variation between the three organisational levels and the three Ambulance Service NHS Trusts, thereby providing richness and shape to the Discussion Chapter that follows.

### **Chapter Five - Discussion:**

The Discussion Chapter provides an in-depth examination of the analysis and the interpretation of findings reported in the previous chapter. Critical discussions of each dominant and subdominant theme are demonstrated with commonalities and differences drawn between the findings and previously published research covering the relevant aspects of patient safety-related literature. The chapter concludes with an itemised summary of the key original contributions to knowledge provided by this study.

### **Chapter Six - Strengths, Limitations and Recommendations:**

The Discussion Chapter is followed by an overview of the study's strengths and limitations to justify and further dissect some of the decisions made during the study. The strengths and limitations are then followed by the recommendations for future research, policy, practice and education in the NHS Ambulance Services.

### **Chapter Seven - Reflections of the Researcher:**

The seventh chapter is a result of the reflexive approach adopted for this research and summarises my reflections documented during the study, as well as following its completion.



The reflective approach was facilitated by the use of a journal where perceptions, attitudes and experiences were recorded; some of which are included verbatim in this chapter.

## **Chapter 1 - INTRODUCTION**

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### **1.1 INTRODUCTION**

This chapter aims to introduce the study and provide adequate context and justification for the need to carry out this research. It begins by exploring the topic of patient safety in healthcare more generally before centring on the emergency service setting, thereby contextualising the issue while emphasising the significance of the study against the broader landscape. The chapter then proceeds to present a comprehensive background of the role of the NHS Ambulance Services and how it has developed over the years, as well as how the NHS Trusts are presently organised in England and an overview of the patient safety issues currently faced.

### **1.2 WHY PATIENT SAFETY IN THE AMBULANCE SERVICES**

#### **1.2.1 The Emergence of Patient Safety as a Principle in Healthcare**

In recent decades, it has become clear that even with all of the advances in modern medicine, patients are still at significant risk under care. Patient safety has been on the worldwide agenda ever since the Institute of Medicine (IOM) released large-scale reports in 1999 and 2001, estimating that a high number of deaths were caused by preventable medical errors (Institute of Medicine, 1999; 2001). Mostly building upon work done by the Harvard Medical Practice Study, the Institute of Medicine published 'To err is human: building a safer health system', generating a significant amount of concern after highlighting that an estimated 44,000 to 98,000 patients in the United States die annually because of medical malpractice (Brennan et al., 1991; Leape et al., 1991; Stelfox et al., 2006). Shortly following these seminal reports, the World Health Organization (WHO) launched their World Alliance for Patient Safety in 2004, passing a resolution that encouraged nations to set patient safety as a significant priority while appointing their Director-General with the responsibility of undertaking the actions involved (World Health Organization, 2019). Since then, research into patient safety has been steadily increasing, with the Health Foundation supporting 27 patient safety projects in the United Kingdom in the year 2015 alone (Illingworth, 2015).

As research began to uncover the newly-found shortcomings surrounding safety and the profound impact it can have on patients, the healthcare industry started looking externally to high-reliability organisations (HROs), such as nuclear power plants and space programmes, to examine how they consistently maintained safe operations in dangerous conditions with potentially disastrous outcomes (Weick and Sutcliffe, 2001). Reviews of the disasters at Chernobyl and the Challenger shuttle showed that the organisational culture that tolerated the system flaws and procedural violations contributed to these disastrous incidents (Pidgeon, 1998). In the Challenger case, an investigation indicated that '*Economic strain on the organisation together with safety rule violations suggested that production pressures caused managers to suppress information about O-ring hazards, knowingly violated safety regulations in order to stick to the launch schedule*' (Neal and Vaughan, 1998, p. xii). Parallels to these investigations can be drawn to the findings of the Francis Report released in 2013, which was one of the five inquiries conducted, surrounding the events at the Mid Staffordshire NHS Foundation Trust. It was estimated that from January 2005 to March 2009, between 400 and 1,200 patients died in a hospital in the United Kingdom as a result of a combination of financial pressures, staffing shortages and a negative organisational culture relating to the managerial and leadership responsibilities, ultimately leading to the acceptance of substandard practice (Ball et al., 2013; Francis, 2013). There are lessons to be learned from other industries, and despite the growing attention, patient safety still faces enormous obstacles with its varied terminology and application to policies and practice in healthcare, requiring more research to improve the safety of patients in healthcare (Emanuel et al., 2008). The next section provides an overview of the study's rationale and justification for why this research is currently needed.

### **1.2.2 Study Rationale**

While the emphasis on patient safety research gradually grows in healthcare, one area that is often overlooked is the emergency medical services (EMS), or ambulance services. Within the patient safety literature, this care setting is rarely explored, even when considering the high risk of harm faced by patients (Bigham et al., 2011; 2012). It is evident that the ambulance and emergency services tend to be disregarded and understudied in the literature when compared to their healthcare counterparts, and some studies concerning patient safety in this care setting even neglect to include any front-line staff at all. For example, one study hosted an international summit that included over fifty patient safety

experts within the ambulance and emergency services to discuss existing research, reflect on patient safety risks and to share ideas to improve patient safety. A Canadian advisory committee determined which roles to include in this summit, resulting in paramedics comprising zero of the fifty-two overall participants (Bigham et al., 2011). While the literature surrounding patient safety in other care settings continues to grow, this increased emphasis has not been matched in the ambulance and emergency services. This neglect was not unique to the academic setting, and in 2009 the National Health Service (NHS) released a 66-page comparative review of international ambulance service best practice, in which the term 'patient safety' was mentioned zero times (OSHA, 2009).

Although the interest in patient safety has gradually grown over the last several years in the ambulance and emergency services, albeit behind the rate of other care settings, there remains a significant paucity of research within this setting (Bigham et al., 2011; 2012; Fisher et al., 2015; Hofoss and Deilkås, 2008; Illingworth, 2015). A scoping review by Fisher and their colleagues (2015) at the University of Warwick found that the existing research in this area, albeit negligible, was predominantly of low-quality and took place in a single ambulance service station, limiting its application to other settings. The publications systematically reviewed by Fisher et al. (2015) decidedly lacked enough detail to enable an understanding of the findings' application and generalisability to similar settings, participants and contexts. Underscoring the lack of research in this area is the fact that most of the patient safety literature is based on data from hospitals and other primary care settings, without much focus on the ambulance services (Altman, Clancy, and Blendon, 2004; Brickell et al., 2009; Fisher et al., 2015; Rust et al., 2008). These care settings are substantively different from that of the ambulance and emergency services, limiting the generalisability of their findings and requiring that new research is conducted in this environment where the risks to patients are extensive (Bigham et al., 2012).

While there is a significant absence of patient safety literature in general, less evidence exists which explores the staff perceptions of patient safety in the ambulance and emergency services (Fisher et al., 2015; O'Hara et al., 2014; 2015; Wankhade, 2016). The existing relevant research typically has focussed on a small sample using quantitative measures, relied on analysing secondary data, or has investigated perceptions from one specific role, such as paramedics or medical directors, instead of from all levels of staff. Research utilising secondary data generally relies on the wealth of information available

from the results of the NHS Staff Surveys by the Care Quality Commission (CQC). The data from these surveys provide an annual insight into the attitudes of staff in respect to many different areas, such as patient care and experience, job satisfaction, errors and incidents and health and wellbeing (NHS Survey Coordination Centre, 2018). All NHS staff are eligible to take part in the NHS Staff Surveys, and the process is outsourced to the Picker Institute to protect the anonymity of respondents (Picker Institute Europe, 2019). The mandatory section of the questionnaire has approximately 31 specific questions, including many that touch upon aspects related to patient safety, such as incident reporting, health and safety, patient care as a trust priority and perceptions of management (NHS Survey Coordination Centre, 2018). Results of the NHS Staff Surveys are predominantly strengthened by the substantial sample size and because they can be compared over time, within the same and across similar organisations, as well as against the national figures (Fisher et al., 2015; NHS Survey Coordination Centre, 2018).

To highlight the perceptions of staff in the NHS Ambulance Services as captured by the NHS Staff Surveys, a summarised version of the results from the 2017 NHS Staff Survey are outlined in the table below. Several key findings related to patient safety were included, and the data represent a sample size of (n = 18274) from all ten Ambulance Service NHS Trusts in England.

**Table 2: 2017 NHS Staff Survey Results - NHS Ambulance Trusts**

<b>Scored Key Findings</b>	<b>%</b>
Staff witnessing potentially harmful errors, near misses or incidents in last month	35
Staff reporting errors, near misses or incidents witnessed in the last month	83
Staff feeling unwell due to work-related stress in the last 12 months	48
Staff reporting good communication between senior management and staff	20
Staff attending work in the last three months despite feeling unwell because they felt pressure from their manager, colleagues or themselves	61
Staff working extra hours	84
Staff agreeing that their role makes a difference to patient or service users	87
Staff able to contribute towards improvements at work	46

(NHS Survey Coordination Centre, 2018)

The data from the above table demonstrate several striking findings; in particular, that a significant number of respondents have witnessed an error within the last month, and

although the number of staff reporting incidents appears to be high, 12,340 respondents chose not to answer that question, increasing its vulnerability to non-response bias. Furthermore, a total of 17 percent of respondents admitted that they had not filed a report after witnessing potentially harmful errors, near misses or incidents, indicating that a substantial number of concerns go unreported.

Beyond reporting, another concerning finding is that a majority of respondents are working extra hours, as well as working while feeling unwell because of pressure from colleagues or themselves, which may have a considerable impact on the standard of care that patients receive. Fisher et al. (2015) conducted a secondary analysis of 3823 responses to the NHS Staff Survey 2011, indicating that survey participation is growing. This growth is captured by the participation in the latest NHS Staff Survey in 2018, which included a total of 20,911 respondents from the NHS Ambulance Services (NHS Survey Coordination Centre, 2018). However, despite its strengths, these data are limited and provide only a snapshot of staff perceptions using percentages and descriptive statistics, lacking a more thorough investigation of the perceptions, feelings, opinions and experiences of staff (Kendall, 2008). While the results are illustrative of the overall staff feeling towards reporting patient safety incidents, for example, a qualitative approach is necessary to explore the underlying factors of these numbers.

Beyond research using secondary data, primary research concerning the perceptions of patient safety can be found embedded in other care settings, particularly amongst nurses and physicians; however, a substantial gap exists around similar research in the ambulance and emergency services (Fisher et al., 2015; Nicklin and McVeety, 2002; Scherer and Fitzpatrick, 2008). Capturing the complex perceptions of patient safety by health professionals can identify patient safety issues that are subsequently used to conceptualise strategies and develop policies that would aid in the addressing of those issues, thereby helping in the development of policy, education, practice, and supplemental research (Atack and Maher, 2009; Bishop and Boyle, 2016; Blignaut, Coetzee and Klopper, 2013). The effectiveness of this method has been established with similar health professionals and care settings in the past, such as in nursing (Nicklin and McVeety, 2002; Mayo and Duncan, 2004). However, as research in the ambulance and emergency services is less developed than that of secondary care, a fundamental lack of evidence currently exists which may

mean that a different approach is required (Fisher et al., 2015; Nicklin and McVeety, 2002; Scherer and Fitzpatrick, 2008).

The limited emphasis in the literature demonstrates a significant need for research that explores and characterises the staff perceptions of patient safety in the ambulance and emergency services. To aid other researchers conducting patient safety research, the authors Hofoss and Deilkås (2008) produced a set of structured guidelines to direct and inform the development of future work in this area. Hofoss and Deilkås (2008) suggested that there are three existing approaches to researching patient safety that will identify any patient safety issues as well as aid in the conceptualisation of ideas to improve patient safety, including the investigation of adverse events and medical errors, the design of healthcare models of delivery and the culture of these individual organisations. The third approach concerns the assessment of the patient safety attitudes of staff, which is argued as being fundamentally critical to improving patient safety by several large organisations, including the World Health Organization (WHO), European Union (EU) and the National Patient Safety Agency (NPSA) (Hofoss and Deilkås, 2008; Sexton et al., 2006). As the scope of this study does not include the investigation of adverse events through root cause analysis or the design of healthcare models, the third approach was the most aligned with research, which aimed to explore and capture the perceptions of staff with an exploratory approach. Therefore, this qualitative study aims to address the lack of research by capturing the staff perceptions of patient safety from three distinct Ambulance Service NHS Trusts in England, as well as from a range of positions including operational, management and executive-level staff. The perceptions of patient safety will be explored concerning areas identified as significant or lacking in the literature review; however, the primary focus will remain on answering the research question selected for this exploratory study, which centres on the staff perceptions of patient safety. The hope is that a deeper understanding of patient safety issues and relevant concepts raised by participants in this research project will serve as a foundation to guide future work in this area.

The following sections will provide an overview of the definition and conceptualisation of patient safety, as well as the background of the NHS Ambulance Services, covering its history, current organisation, and the mounting difficulties they are facing concerning patient safety provide context to the proposed study.

### **1.2.3 Defining Patient Safety in Healthcare**

As touched upon earlier, patient safety has been on the worldwide agenda following large-scale reports by the Institute of Medicine in 1999 and 2001 that estimated that a high number of deaths are caused by preventable medical errors and negligence (Brennan et al., 1991; Hofoss and Deilkås, 2008; Leape et al., 1991; Stelfox et al., 2006). Since then, the focus on patient safety has steadily increased and, as previously mentioned, the World Health Organization (WHO) launched their World Alliance for Patient Safety shortly after the reports by the IOM, passing a resolution that encouraged nations to set patient safety as a significant priority (World Health Organization, 2004). Despite all of this attention, patient safety continues to face enormous obstacles with its application to policies and practice in healthcare (Emanuel et al., 2008). Part of the problem concerns its conceptualisation, as advancements in patient safety have been hindered internationally by the absence of consistent classification of the concept. As the research in this area continues to develop, there are still considerable differences in how data around patient safety is measured and conceptualised in both research and healthcare environments, (Davies, Hébert and Hoffman, 2003; Fisher et al., 2015; Kim et al., 2015; Sherman et al., 2009).

In 2005, the World Health Organization (WHO) attempted to address this lack of standardisation by developing the International Classification for Patient Safety (ICPS), a conceptual framework that aims to link classifications of patient safety on a local and national scale. Despite this attention from the WHO, one universally accepted definition of patient safety does not yet exist, resulting in considerable barriers to the development of strategies and research projects that are evidenced-based, as well as the assessment any patient safety-related policies and procedures in healthcare (Sherman et al., 2009). Discrepancies and variations of the patient safety definition continue within the literature, predominantly concerning the scope of the word 'safety' (Ilán and Fowler, 2005; Runciman, 2006; Thomas and Petersen, 2003; Walton et al., 2010). This disagreement extends to the conceptualisation of patient safety, as Edozien (2013) argued that instead of focussing on a single definition, there was a need for the classification of all patient safety-related terms and concepts. Prior to the suggestion by Edozien (2013), work has previously been done around defining key concepts and terms without settling on a final definition, as demonstrated by the Joint Commission on Accreditation of Healthcare Organizations



(JCAHO), who developed a taxonomy to standardise the classification of adverse events and near misses in 2005 (Chang et al., 2005). Research in this area continues today, and despite the recent growth in interest, significant variations still exist in how patient safety is defined and conceptualised, thereby somewhat limiting the advancements in patient safety research (Fisher et al., 2015; Kim et al., 2015).

Although many inconsistencies exist in the literature surrounding the conceptualisation of patient safety, several international health organisations and institutions have developed or adopted a singular definition. Table 3 below lists the most frequently used definitions of patient safety utilised in the literature:

**Table 3: Definitions of Patient Safety in the Literature**

Organisation	Term	Definition
World Health Organization (WHO)	Patient Safety	<i>'the absence of <b>preventable harm</b> to a patient during the process of health care'</i> (World Health Organization, 2004).
The Institute for Healthcare Improvement (IHI)	Patient Safety	<i>'Making care continually safer by <b>reducing harm and preventable mortality</b>'</i> (Institute for Healthcare Improvement, 2019).
The Agency for Healthcare Research & Quality (AHRQ)	Patient Safety	<i>'Patient safety is a discipline in the health care sector that applies safety science methods toward the goal of achieving a trustworthy system of health care delivery. Patient safety is also an attribute of health care systems; it <b>minimizes the incidence and impact of, and maximizes recovery from, adverse events</b>'</i> (Emanuel et al., 2008, p. 6).
The Institute of Medicine (IOM)	Patient Safety	<i>'the <b>prevention of harm</b> to patients'</i> (Aspden et al., 2004, p. 5)
Canadian Patient Safety Institute (CPSI)	Patient Safety	<i>'the pursuit of the <b>reduction and mitigation of unsafe acts</b> within the healthcare system, as well as the use of best practices shown to lead to optimal patient outcomes.'</i> (Canadian Patient Safety Institute, 2018).

While of varying lengths and representing many different organisations and countries, the definitions above demonstrate a remarkable consistency concerning their central premise around the prevention of patient harm. Despite their similarities, some researchers have argued that they remain overly vague, thereby reducing their applicability to specific health environments. A rigorous review of the data surrounding definitions of patient safety in the

literature found that AHRQ's definition was too generic, and they instead produced and expanded on different interpretations bespoke to individual care settings; except for the ambulance and emergency services, which they omitted (Montoya and Kimball, 2013). Montoya and Kimball (2013) argue that the concept of patient safety will be similar across the entire healthcare realm; however, subtle changes will emerge in care settings due to the variability of their problems, objectives, as well as needs facing each one. Wachter (2012) and Singer et al. (2009a) agreed that it was necessary to tailor definitions to each setting, stating that the tools used by regulatory bodies are too broad, making them incompatible with some areas of healthcare.

Amongst the extensive published work on defining patient safety in healthcare and within specific disciplines or care settings, the ambulance and emergency services unsurprisingly do not have as much emphasis within the literature; an incredibly unique care environment that would benefit from such a distinction.

#### **1.2.4 Defining Patient Safety in the Ambulance Services**

As described above, the ambulance and emergency services are rarely explored in the literature, and the evidence base for patient safety is minimal when compared to other areas of healthcare, even when considering the high risk of harm faced by patients in this particular setting (Bigham et al., 2011; 2012; Fisher et al., 2015). A recent review of the literature concerning patient safety in the ambulance services identified 330 relevant studies in their literature search and found that the research concerning the patient safety attitudes of staff was conflicted and worsened by an absence of a standardised and universal terminology which made comparisons difficult (Fisher et al., 2015). Fisher et al. (2015) also analysed official documents from the NHS Ambulance Services, including annual reports and quality accounts, finding that they also had extremely different foci as they lacked consistent terminology and standardisation which made finding parallels within safety priorities and problem areas challenging (Fisher et al., 2015). Similar to the broader literature, these reports provided little evidence of the staff perceptions of patient safety. With these gaps present in the literature, it is evident that there is a minimum amount of research available in the ambulance and emergency services, with future research in understanding threats to patient safety being recommended (Bigham et al., 2011; 2012; Fisher et al., 2015; O'Hara et al., 2014; 2015).

In the current literature around the ambulance and emergency services, one single definition of patient safety used across this care setting does not yet exist. An initial literature search revealed zero publications where a single definition of patient safety in the ambulance and emergency services was developed and explicitly stated. The general absence of a definition and its consistent use complicates the interpretation and application of information within the ambulance and emergency services (Fisher et al., 2015). Therefore, Bigham et al. (2011) and Fisher et al. (2015) suggested that to aid future research that there should be a shared adoption of the categorisation of patient safety terms and related concepts, either through a variety of national databases or through categories that can be combined.

### **1.2.5 Working Definition of Patient Safety Adopted for this Research**

The sections above highlight the increase of patient safety-related language and the present lack of a universally adopted definition of patient safety, as well as issues that may arise because of this absence in the ambulance and emergency services (Chang et al., 2005; Davies, Hébert, and Hoffman, 2003; Fisher et al., 2015; Sherman et al., 2009). As this study focusses on the staff perceptions of patient safety within the NHS Ambulance Services, it was considered essential to select and consistently utilise a single definition to establish the scope of the study. A validated definition of patient safety that is current, relevant to ambulance and emergency services and with international currency and application was fundamental in this choice. The following definition from The Institute of Medicine (IOM) was selected, as it adequately represented the theme of preventing patient harm found in each definition above in Table 3, in particular, those from the World Health Organization (WHO) and the Institute for Healthcare Improvement (IHI):

*‘the prevention of harm to patients’* (Aspden et al., 2004, p. 5)

Additionally, the definition of patient safety as provided by the IOM has application in the ambulance and emergency services and the exploratory nature of this research, as well as is from an internationally recognised organisation that acted as the initial catalyst and the driver for patient safety research.

## **1.3 BACKGROUND OF THE NHS AMBULANCE SERVICES**

### **1.3.1 Role of the Ambulance Services and Paramedics**

The NHS Ambulance Services in the United Kingdom have come a long way since their dependence on horse-drawn ambulances in the 1880s; however, the role of the paramedic remained somewhat stagnant until a little less than a century later (Pollock, 2012). Through this time, the work of paramedics was primarily seen as manual labour with no healthcare component, until the Ministry of Health released the Millar Report in 1966 (Blaber, 2008). The Millar Report advised the then council and county-run ambulance services that rigorous first aid training covering both medical and non-medical subjects should be given to the crews (Blaber, 2008; Kilner, 2004). Before this report was released, the teams on ambulances were only required to have a certificate in first aid, the enforcement of which reportedly varied around the United Kingdom, resulting in a variable level of patient care and safety depending on the region (Kilner, 2004; Spears, 1994). In 1974, eight years after the Millar Report was released, the ambulance services were fully integrated with the National Health Service (NHS), becoming increasingly medicalised and healthcare focussed as a result of this alignment, which led to a considerable improvement to patient safety (Blaber, 2008).

Following their incorporation into the NHS, the NHS Ambulance Services have observed unparalleled developments, all of which have significantly impacted the safety of patients. The decade of the 1970s brought advanced clinical training, the 1980s new equipment, care for trauma patients and the paramedic role, the 'NHS Trust' status and ongoing paramedic knowledge and skill development in the 1990s, and defined care roles within the broader health services in the 2000s (Blaber, 2008; Fisher et al., 2015). More recently, the Health Professions Order 2001 took effect in 2002, requiring that paramedics start registering with the Health Professions Council (HPC) - currently titled the Health and Care Professions Council (HCPC). Since 2003, all paramedic training programmes have had to be registered with HCPC (College of Paramedics, 2019; The Health Professions Order 2001, 2002). The paramedic role has continued to evolve since then, including further developments in their education and training as the services are now moving entirely towards the higher education environment with mandatory degree-level qualifications (Wankhade and Mackway-Jones, 2015). In March 2018, the HCPC decided that registration criteria should shift from 'Equivalent to Certificate of Higher Education' to 'Bachelor degree with honours', to ensure

that paramedics maintained a heightened level of proficiency during the provision of care, thereby having a positive impact on patient safety (Health & Care Professions Council, 2018). Higher education institutions all over the United Kingdom have been prepared for this, with approximately 39 universities currently offering a degree programme (Health & Care Professions Council, 2019).

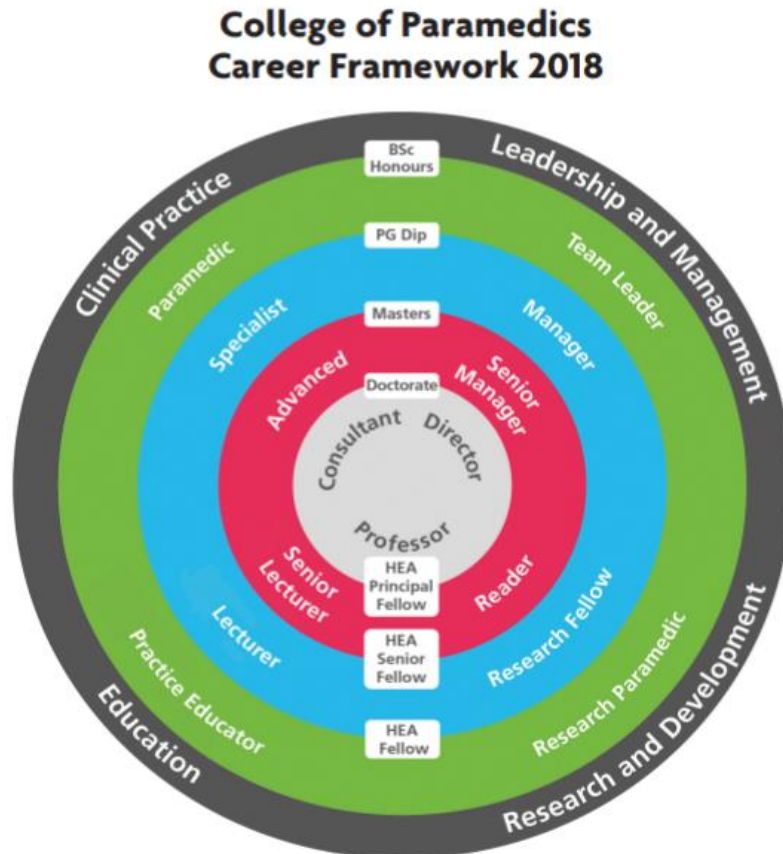
Coinciding with the required increase in educational achievement, the HCPC has also published a list of competencies expected of paramedics to ensure a high level of patient safety and standard of care. These competencies are regulated by the HCPC and can be found in their standards of proficiency for paramedics document, which centres on 15 broad declarations, concerning areas such as maintaining fitness to practice, being aware of culture's impact on practice, as well as an ability to source practice from appropriate skill sets and knowledge (Health & Care Professions Council, 2014). This document was initially published in 2003 and was later revised in 2007, to where it currently stands as of 2014, potentially changing again in the future when determined necessary to have a positive effect on patient safety (Health & Care Professions Council, 2014).

Paramedics face a significant number of challenges that have been evidenced in the patient safety literature, including the high level of demand by service users and issues around resource scarcity (Fisher et al., 2015; O'Hara et al., 2014; 2015). Given the mobile and isolated nature of their clinical work, paramedics are also faced with the difficulties of establishing an environment that is favourable to a high level of patient safety during emergencies (Crosetta et al., 2018). Setting guidelines for knowledge and creating regulated career pathways is fundamental in allowing paramedics to develop safer practice, and these changes are ongoing with patient safety in mind (College of Paramedics, 2018). Recent large-scale reviews and legislative proposals have also surfaced in the last several years with their sights on advancing the role of the NHS Ambulance Services. With the aim of turning the ambulances into mobile centres of treatment for urgent care, the Keogh Review and the Five Year Forward View both developed proposals to enhance and better employ the knowledge and skill sets of paramedics on-site at an emergency, thereby having a positive impact on patient safety (Keogh, 2013; NHS England, 2014). A report by Turner et al. (2017) concluded that it is too early to determine whether these recent changes would be a panacea for patient safety in the services. However, the evidence in the literature has established that the current pressures on the services and its staff, such as the demand by

service-users and resource scarcity, are likely unsustainable and present severe patient safety risks to the NHS Ambulance Services.

With the advent of the paramedic practitioner role and the recent change in legislation allowing advanced paramedics to prescribe medicines to patients, the NHS Ambulance Services are continuing to widen their scope and adapt their practice to fit the increasing demand and the needs of service users to improve patient safety (NHS England, 2018a; Woollard, 2006). Through these incremental changes in the training and education of paramedics, their clinical knowledge and skill sets have grown, enabling them to perform increasingly complex medical procedures and interventions in both emergency and primary care contexts (NHS England, 2013). While the increased knowledge and skill sets expected of paramedics continue to professionalise the role further, they also arguably expand the risks to patient safety due to an increased likelihood of human error (Fisher et al., 2015; LeBlanc et al., 2005). However, as these changes take shape and increase the professionalisation and medicalisation of the role, paramedics are now qualified to work in many different settings, including that of the NHS 111 service, walk-in centres and GP practices (Quaile, 2015; Wankhade, 2016). To give these developing roles more structure and shape, the College of Paramedics developed a framework to establish the career opportunities and routes that paramedics can take, including the fields of management, research, education and clinical practice (Figure 1). Frameworks like these demonstrate the high level of regulation governing the paramedic role in the NHS Ambulance Services in England. This structured approach sets it apart from other international ambulance and emergency services, where the position is more of an ambiguous label and the clinical knowledge and abilities of each vary, resulting in clinical practice, which is arguably less safe (Fitzgerald and Bange, 2007).

**Figure 1: College of Paramedics Career Framework 2018**



(College of Paramedics, 2018)

The framework above represents the available career pathways available for paramedics in the English NHS Ambulance Services, highlighting the designated routes they can progress to as they further their level of education, experience and clinical competence. Structured hierarchies like these are familiar within other healthcare professions, such as with nurses and physicians, demonstrating the further integration of paramedics into the NHS. Historically, paramedics have had limited options for progressing their clinical skill sets and were commonly referred to as 'ambulance drivers', as they had minimal impact on the safety of patients beyond transporting them. However, as shown in this career framework, paramedics now have an incentive to continually improve and maintain their clinical practice through professional development, thus improving patient safety (College of Paramedics, 2018). In 2015, NHS England released a report stating that clinical care

provided by 'senior decision-makers' can produce improved patient outcomes (NHS England, 2015). This report includes the NHS Ambulance Services, where it advised that the roles of specialist, advanced and consultant paramedics lead to better clinical outcomes for patients, as well as lessen the need for emergency transports by treating the patient at the scene or by referring them to an appropriate care pathway (NHS England, 2015). Guidelines and frameworks from the College of Paramedics and the CQC have been instrumental in the professionalisation of the paramedic role and crucial in improving patient safety within the NHS Ambulance Services (College of Paramedics, 2018; NHS England, 2015; Wankhade, 2016).

Beyond the impact on patient safety arising from evolving abilities and expectations of paramedics, the overall structure of the NHS Ambulance Services has also changed significantly, with implications for the safety of patients. Since 2006, the English NHS Ambulance Services now consist of ten distinct Ambulance Service NHS Trusts, in addition to an Ambulance Service NHS Trust on the Isle of Wight. These Ambulance Service NHS Trusts are centrally represented by the Association of Ambulance Chief Executives (AACE), whose objective is to coordinate and facilitate the sharing of each NHS Trust's skill sets and knowledge to more readily address the specific patient safety challenges and issues faced (Association of Ambulance Chief Executives, 2019). The ten Ambulance Service NHS Trusts in England, including some NHS Foundation Trusts, are as follows:

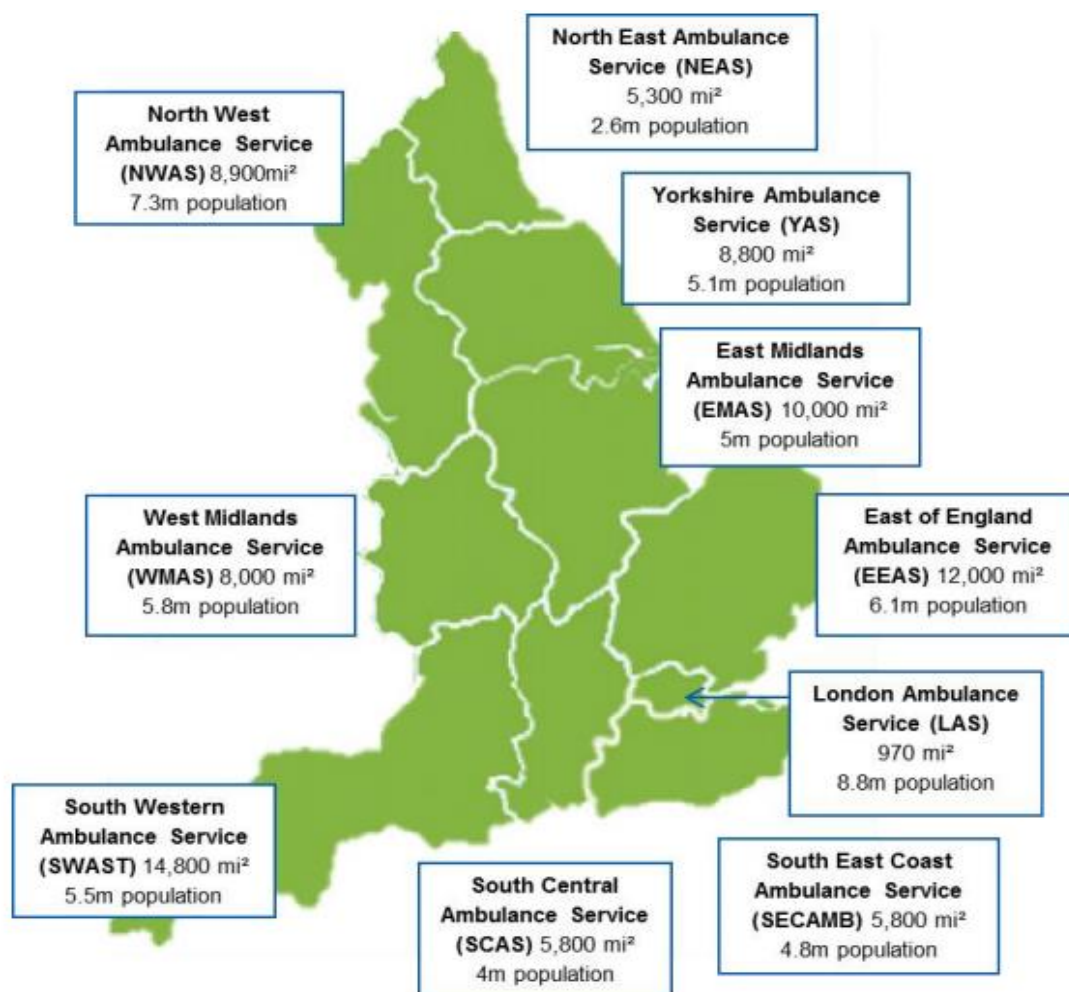
- East Midlands Ambulance Service NHS Trust (EMAS)
- East of England Ambulance Service NHS Trust (EEAST)
- London Ambulance Service NHS Trust (LAS)
- North East Ambulance Service NHS Foundation Trust (NEAS)
- North West Ambulance Service NHS Trust (NWAS)
- South Central Ambulance Service NHS Foundation Trust (SCAS)
- South East Coast Ambulance Service NHS Foundation Trust (SECamb)
- South Western Ambulance Service NHS Foundation Trust (SWASFT)
- West Midlands Ambulance Service University NHS Foundation Trust (WMAS)
- Yorkshire Ambulance Service NHS Trust (YAS)

To further illustrate the positioning of the ten Ambulance Service NHS Trusts in England and the populations and regions they serve, Figure 2 below provides a map developed by



Carter (2018), which summarises this information. However, while representative of the ten Ambulance Service NHS Trusts in England, it should be noted that the map by Carter (2018) does not include the Isle of Wight NHS Trust.

**Figure 2: Map of English Ambulance Service NHS Trusts**



(Carter, 2018)

The ten Ambulance Service NHS Trusts illustrated above are all managed and overseen by the Care Quality Commission (CQC). The CQC is a regulatory body that requires that the NHS Trusts perform to an expected clinical standard, as well as subjects them to routine regulatory inspections to ensure they are meeting these benchmarks (Care Quality Commission, 2014). Ambulance Service NHS Trusts that do not meet the required standards set by the CQC risk losing their status and registration, barring them from the provision of health services (Conrad and Guven Uslu, 2011). In addition, as the

medicalisation of the services continues to increase, Ambulance Service NHS Trusts in England now also need to comply with best practice guidelines, which are produced by the Joint Royal Colleges Ambulance Liaison Committee (JRCALC) using an evidence-based approach (Joint Royal Colleges Ambulance Liaison Committee, 2013). These guidelines have had a positive impact on patient safety, as they are used as a clinical reference handbook by paramedics, advising them how to safely deal with any specific incident (O'Hara et al., 2014; 2015).

All of these changes highlight the NHS Ambulance Services' continued integration into the National Health Service; however, despite adherence to these national regulations and performance measures, Ambulance Service NHS Trusts have a degree of autonomy concerning how they structure and provide their services within England, resulting in some level of variation (Wankhade, 2011). This autonomy may contribute to the differential between NHS Trusts in the rate, severity and type of patient safety incidents reported to National Reporting and Learning System (NRLS), as they fluctuate extensively between NHS Trusts. To illustrate this variability in patient safety incidents, data provided by the NRLS demonstrates that from the 1st April 2018 to the 30th September 2018, the South East Coast Ambulance Service NHS Foundation Trust (SECamb) reported that approximately 52, or 7.2 percent, of their 727 patient safety incidents resulted in the death of a patient. However, the bordering organisation of the South Central Ambulance Service NHS Foundation Trust (SCAS) identified no patient deaths in 85 patient safety incidents during the same time (NHS Improvement, 2018a). The underlying reasons for these significant variations are unknown and could be a result of the size of Ambulance Service NHS Trusts, their reporting styles or overarching organisational culture, for instance.

In addition to variation between the rates of patient safety incidents across Ambulance Service NHS Trusts, NHS Staff Survey scores, which capture the perceptions of staff on a range of patient safety issues as discussed in an earlier section, also vary widely (National Patient Safety Agency, 2017; NHS Survey Coordination Centre, 2018). For example, in 2017, 46 percent of staff who responded from SECamb reported that 'Care of patients / services users is my organisation's top priority', while the national average for all ten NHS Trusts and the Isle of Wight was 59 percent (NHS Survey Coordination Centre, 2018). These differences may reflect geographical and demographic variation between each Ambulance Service NHS Trust in England, how they are individually structured to provide

care to patients, or it may be indicative of their respective cultures of reporting patient safety incidents. The ten NHS Trusts also vary somewhat in their CQC inspection ratings, which include safety as a key measure, highlighting the divergence in their levels of patient safety (Care Quality Commission, 2019). According to the latest available ratings at the time of this study, of the ten Ambulance Service NHS Trusts in England, one was rated by the CQC as 'Outstanding', eight were rated 'Good' and only one as 'Requires Improvement' (Care Quality Commission, 2019). As these challenges around patient safety are varied and specific to each NHS Trust, it is necessary to take individualised approaches to both understand and address them.

As demonstrated above, the NHS Ambulance Services and the role of the paramedic have both undergone significant changes in recent years. These structural, organisational and functional changes outlined may have influenced patient safety; therefore, staff perceptions of patient safety must be explored and captured against the background of these large-scale shifts.

### **1.3.2 NHS Trust Organisational Staffing Structure**

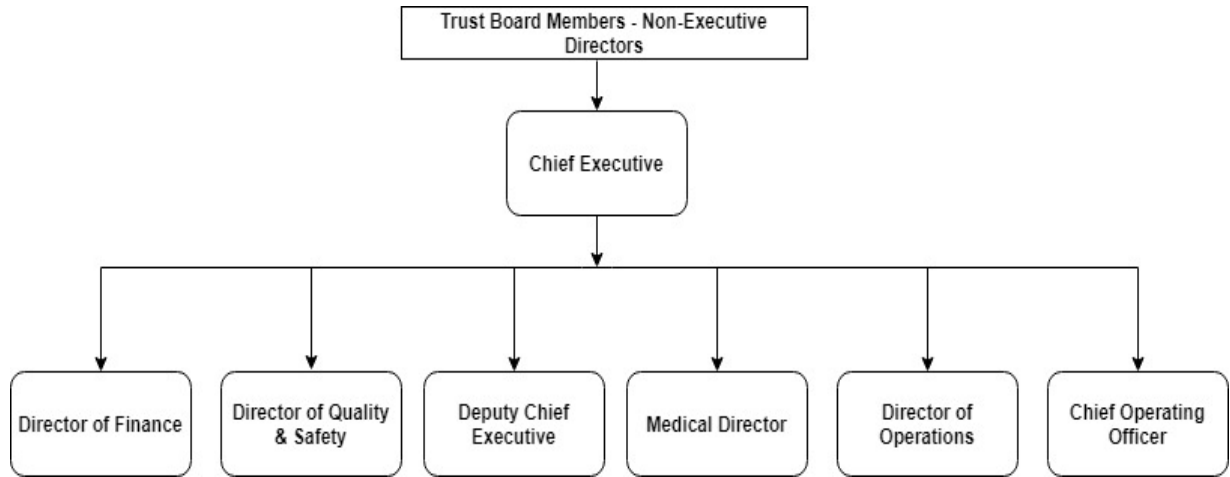
The patient safety performance, or outcomes, of an organisation, has been identified in the literature as being closely aligned with or represented by staff perceptions of patient safety (Singer et al., 2009b; Vogelsmeier et al., 2010). Research has also shown that attitudes towards patient safety vary by organisational level, highlighting the importance of capturing these differences across a broad range of staff in the NHS Ambulance Services, including executives, managers and front-line staff (Gallego et al., 2012). Although each Ambulance Service NHS Trust has a standard overall hierarchical structure consisting of executive staff down to operational staff, the level of autonomy between NHS Trusts results in diverse staffing composition, where some roles may exist in one NHS Trust while not in others. Unfortunately, this means that a diagram of the positions and organisational structure of one trust may not accurately represent the other nine. However, although they are different, they do all tend to follow a similar graded and hierarchical structure with fixed tiers, including that of an executive, management and operational level. While the roles and configurations may vary, an overall description of the fundamental organisational structure of all ten NHS Trusts can be described regarding executive, management and operational level staff to help contextualise their respective impact on patient safety.

The three figures below, which highlight the organisational composition of each of the organisational levels, were developed by consulting several colleagues working across executive, management and operational-level positions in the NHS Ambulance Services, as well as informed by the resources provided online by the College of Paramedics (2017) and the North West Ambulance Service NHS Trust (2015). Ultimately, the three figures were drafted using these resources found online, where they were later sent to these colleagues to determine their accuracy. Further detail concerning the design of each figure is included in their respective sections below. However, although three figures demonstrating the organisational levels and their respective staffing composition are included further below, it is essential to reiterate that these demonstrate a general Ambulance Service NHS Trust structure and are not specific to any single NHS Trust involved in this research. Therefore, while the figure representing the management structure may accurately reflect the structure found within the West Midlands Ambulance Service University NHS Foundation Trust, for example, it may not represent the management configuration of the London Ambulance Service NHS Trust.

#### **1.3.2.1 Executive-level**

The executive-level tier represents the minority of staff in the organisation and typically consists of half a dozen or so directors who serve under the chief executive officer, who then serves under the trust's board of non-executive directors. This tier effectively runs their organisation, delegating responsibilities and actions to a sizeable management-level team underneath them to enact any policy changes or developments. The executive-level is also responsible for setting the tone for patient safety within their respective organisations, as they have the capacity to influence organisational culture by promoting a culture of safety through the establishment and management of procedures and guidelines (Fisher et al., 2015). At the individual level, each director generally has a deputy director ranked below them, who, depending on the scope of the role, may perform more of the day-to-day activities within their remit. Given the smaller number of staff at this level, the figure is more simplistic and straightforward, and an example of the structure commonly observed in each NHS Trust is below:

**Figure 3: Executive-level Hierarchy**

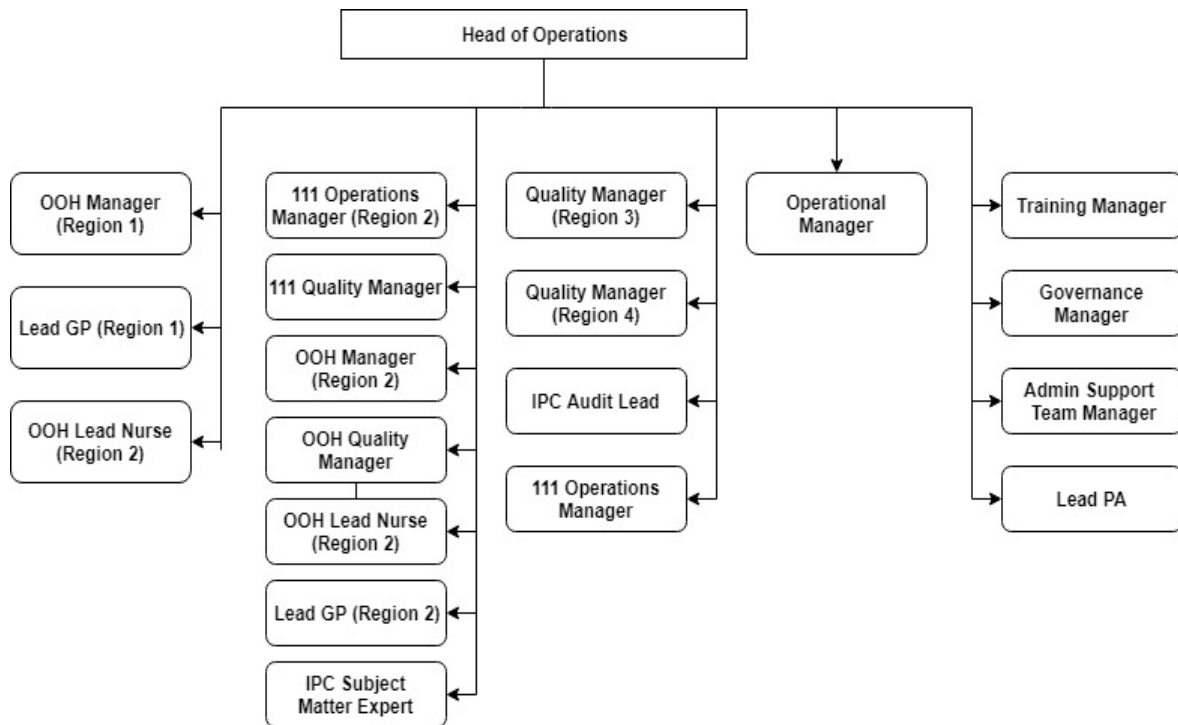


(College of Paramedics, 2017; North West Ambulance Service NHS Trust, 2015)

### 1.3.2.2 Management-level

The management-level is far more complicated than that of the executive-level. It is less well defined, includes a substantial number of individuals and refers to roles such as manager, head, lead, and others that act as intermediaries between the operational and executive levels. An attempt to describe all management structures within the NHS Ambulance Services would be impractical given the various number of teams and their own individualised makeup, site and NHS Trust. However, it is important to present at least one example of a management structure to illustrate how influence and information related to patient safety are cascaded within this level. For example, a high-ranking management-level member of staff, such as the head of operations, shown below, would work closely with someone from the executive team. In their position, they may oversee a wide range of managers and leads in a related field, covering many different geographical areas across their specific region. Management-level staff in this diagram may then work closely with operational staff, such as paramedics, thereby disseminating information around patient safety developments, initiatives and knowledge from above, during the process. Members of senior-level management receive patient safety directives and projects from the executive team, who then facilitate its dissemination through the relevant management teams and later out to operational staff to change practice.

**Figure 4: Management-level Hierarchy**



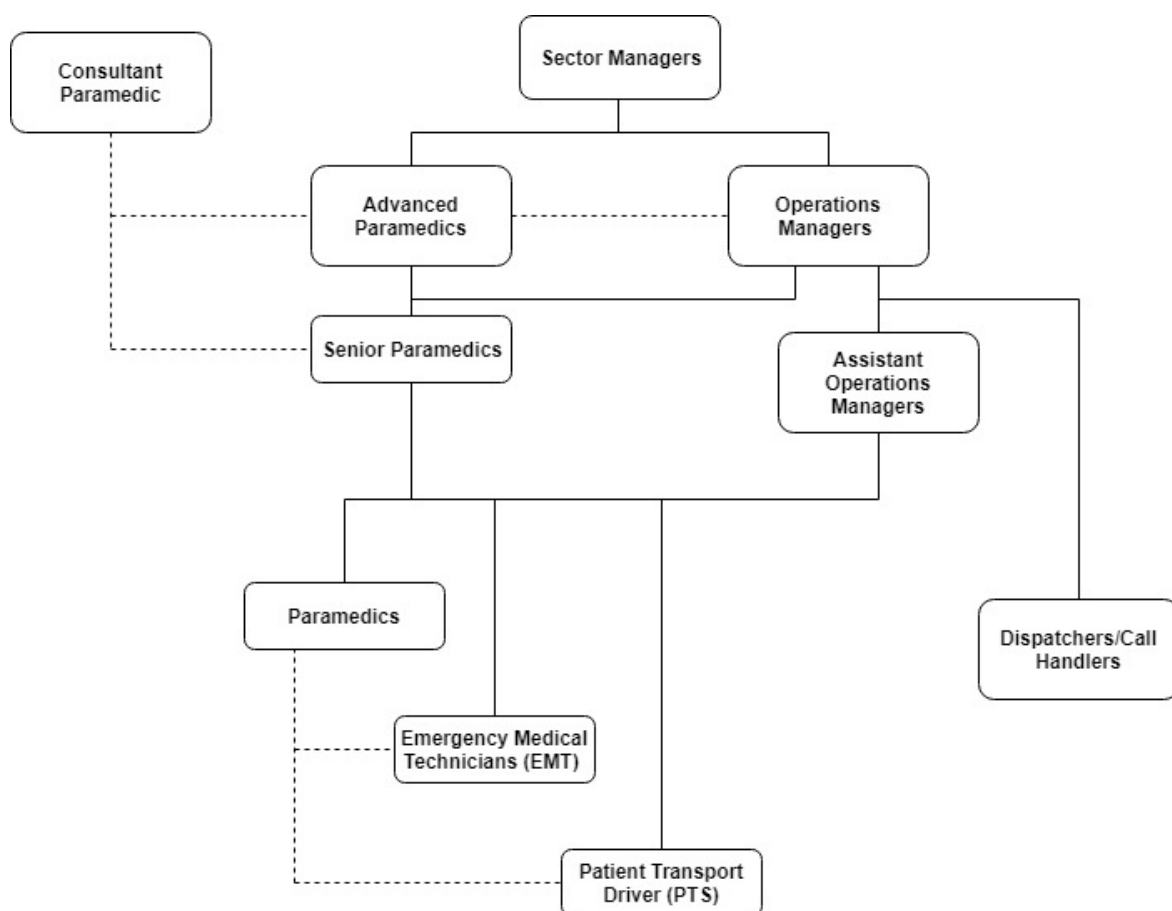
(College of Paramedics, 2017; North West Ambulance Service NHS Trust, 2015)

### 1.3.2.3 Operational-level

Operational-level staff are those primarily involved in the day-to-day operations of treating and caring for patients in the NHS Ambulance Services, including roles such as paramedics, technicians, patient transport drivers, dispatchers and call-handlers. With the highest number of staff of any organisational level, those at the operational-level have the responsibility of implementing the patient safety policies delegated down by the executive and management levels, as well as treating and conveying patients and reporting patient safety incidents, for example. Research has shown that front-line staff tend to view the patient safety of an organisation more negatively than those from the management and executive levels, as this level is typically more aware of the safety culture that is hidden under the surface features of an organisation (Gallego et al., 2012; Singer et al., 2008). The operational-level, similar to the managerial tier, is relatively complex as roles like paramedic may have several variations (consultant, advanced, specialist, senior and newly qualified paramedic) requiring that some work across organisational levels. Consultant paramedics, for example, may be seen more as senior-level management, given their high rank and an extensive level of responsibility in their NHS Trust. Advanced paramedics, on the other

hand, would work closely under operations or sector managers, leading a team of approximately a dozen paramedics beneath them. The figure below presents a loose structure of operational staff in the NHS Ambulance Services, demonstrating the differences in rank and their connection to the other organisational levels:

**Figure 5: Operational-level Hierarchy**



(College of Paramedics, 2017; North West Ambulance Service NHS Trust, 2015)

### 1.3.3 Rising Demand

All of the developments in the NHS Ambulance Services described above are set against a background of rising demand, which has been growing at an unprecedented rate in England over recent years, thereby presenting substantial challenges for patient safety (Clark et al., 1999; Durham, Faulkner, and Deakin, 2016). The Annual Report and Accounts from 2015 to 2016 released by the Department of Health (DoH) highlighted that the number of Category A calls which require an emergency response by an ambulance vehicle at the

scene has grown by 6.8% from 3.1 million to 3.3 million from 2014 to 2016 (Department of Health, 2016). There has also been an increase in the overall number of 999 emergency calls in England, with the NHS Ambulance Services recording a 6.1% (515,506) increase from 8.49 million to 9.00 million calls from 2014 to 2015 (Health & Social Care Information Centre, 2015). The increasing demand is not a new phenomenon, and the literature has demonstrated a growing trend in other developed countries at similar rates over the past several decades; although its pace of increase has quickened recently (Clark et al., 1999; Svenson, 2000; Peacock et al., 2004; Burt, McCaig, and Valverde, 2006; Lowthian et al., 2011a). The table below summarises the collected figures from the National Audit Office (NAO), highlighting the annual increase in 999 calls, as well as 111 transfers, from 2009/10 to 2015/16.

**Table 4: 999 call volume and 111 transfers in England from 2009 to 2016**

Year	999 Call Volume (million)	111 transfers (million)
2009 - 2010	7.9	-
2010 - 2011	8.1	-
2011 - 2012	8.2	0.1
2012 - 2013	8.5	0.2
2013 - 2014	8.5	0.8
2014 - 2015	9.0	1.1
2015 - 2016	9.4	1.3

(National Audit Office, 2017)

Beyond 999 calls, it was important that these figures also included the growing volume of transferred calls received from the 111 service requiring an emergency response (National Audit Office, 2017). The 111 service replaced NHS Direct in 2014 and is a helpline for non-emergency situations that is available 24/7 every day of the year. The service was initially expected to lessen the demand on the NHS Ambulance Services; however, instead of reducing the number of calls, the service is now seen as adding unwanted pressure in the form of additional ambulance call-outs (Pope et al., 2017; Turner et al., 2013).

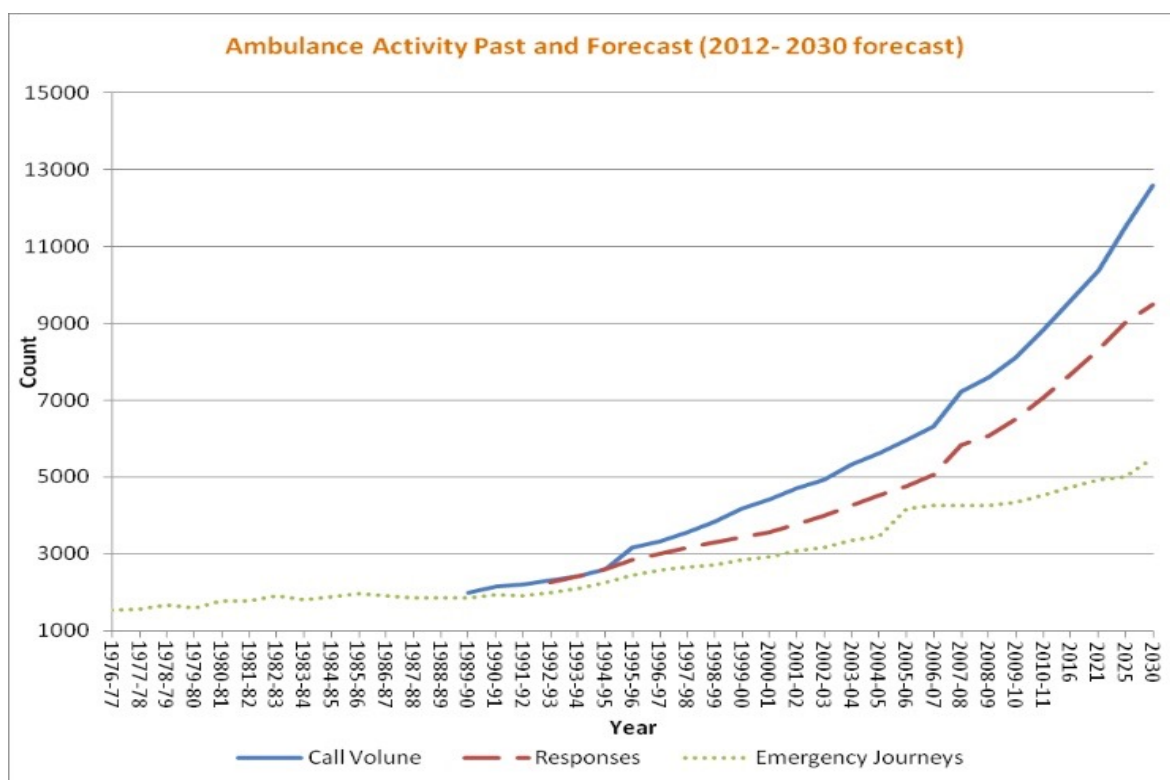
As mentioned earlier, surging demand for the ambulance and emergency services has been observed internationally, although minimal evidence is currently available to demonstrate



the forces behind this shift and any effective countermeasures to combat it (Lowthian et al., 2012; National Audit Office, 2017). Some research has investigated the use of ambulance and emergency service resources and how it is impacted by the dynamics of healthcare systems and demographics, including several recently published reviews and reports which have suggested that the rise in demand is due to the following: fluctuations in population health, demographics, service accessibility, expectations of the community, and health system operations, with an ageing and growing population (Livingstone et al., 2007; Lowthian et al., 2011b; Toloo et al., 2011; Wankhade, 2011). In addition, the National Audit Office (NAO) released a report in 2017 that suggested the rise in demand was a result of issues around alcohol and mental health, as well as the lack of available and accessible alternative care (National Audit Office, 2017). It is essential to emphasise the potential for patient safety risks presented by the current level of demand by service-users and what the potential rise in demand may mean for the NHS Ambulance Services and patient safety (Fisher et al., 2015; National Audit Office, 2017; NHS Survey Coordination Centre, 2018; O'Hara et al., 2015). For example, the increase in demand has had a notable negative impact on staff in the NHS Ambulance Services, as growing workloads have been identified in research as a patient safety risk and can be a common reason for stress and fatigue (Källberg et al., 2017; O'Hara et al., 2014; 2015; Park and Kim, 2013; Patterson et al., 2012; UNISON, 2015). However, at present, there is minimal research available detailing the implications that this growth in demand has on the broader factors of ambulance service provision, as well as on the staff perceptions of patient safety, requiring that additional research be conducted in this area (Lowthian et al., 2011a; National Audit Office, 2017; Australian Government Productivity Commission, 2009).

As proposed in a PhD thesis, the recent trend in the growth of the demand is not projected to stop (Newton, 2013). Utilising the Department of Health's annual 'KA 34' data, Newton (2013) produced a graph that demonstrates the past and forecasted increase of the number of emergency 999 calls as shown in Figure 6 below:

**Figure 6: Department of Health ‘KA 34’ Data**



(Newton, 2013)

Although drawn up by Newton in 2013, the projection in Figure 6 continues to be accurate with a recorded 9.4 million 999 calls and 1.3 million transfers from 111 calls to ambulance services in England from 2015-2016 (National Audit Office, 2017). The growth in demand for NHS Ambulance Services and subsequently added pressures present several safety issues for staff, patients, and the service as a whole. To further illustrate this growing problem facing the NHS, in October 2018, only 89.1 percent of patients were seen in four hours at all English A&E departments, whereas 97.4 percent of patients were seen within the same window in October 2010, resulting in delayed care for a growing number of patients (NHS England, 2018b). It is impossible to accurately predict whether Newton's (2013) analysis of the Department of Health's 'KA 34' data will remain on target in the future. However, it is clear that the NHS Ambulance Services will need to adapt if it does. If the NHS Ambulance Services fail to maintain a high level of care as demand continues to rise, the consequences of this unsustainable and mounting pressure may have severe negative implications for patient safety. Alongside and possibly due to the growing demand, the NHS Ambulance Services are also observing a substantial increase in the number of patient safety incidents that are reported by staff.

### 1.3.4 Patient Safety Incidents

The rising demand is not the only threat to patient safety in the NHS Ambulance Services, as the rate of reported patient safety incidents (PSIs) has also recently spiked, potentially representing a result of the increasing operational pressures. The National Reporting and Learning System (NRLS) is a centralised database in England and Wales that compiles and categorises all patient safety incidents, which are defined by the National Patient Safety Agency (NPSA) as: *'any unintended or unexpected incident which could have or did lead to harm for one or more patients receiving NHS care'* (NHS Improvement, 2018a). Since its launch by the Department of Health in 2003, the NRLS has been collecting, analysing and reporting data quarterly from the NHS Ambulance Services. Currently, the NRLS is paired with Datix®, the reporting system that staff in the NHS Ambulance Services use to report and record incidents, which are then uploaded to the NRLS once a week (South West Yorkshire Partnership NHS Foundation Trust, 2018). Therefore, both the data and patterns identified around patient safety incidents are heavily influenced by self-reporting practices of operational staff and are dependent on the reporting culture in each organisation, potentially representing a conservative estimate of the scale of the problem. Individual Ambulance Service NHS Trusts tend to use this data more locally to investigate risks and help with organisational learning from patient safety incidents. However, the NRLS utilise this data instead to identify trends and threats on a national scale to improve the level of patient safety on a macro-level (NHS Improvement, 2018a; South West Yorkshire Partnership NHS Foundation Trust, 2018). For example, if NHS Improvement determines that there are significant risks present as indicated by large-scale trends in the data of reported patient safety incidents, patient safety alerts will be issued to the relevant Ambulance Service NHS Trusts. NHS Improvement will then pair up with benchmarked NHS Trusts to provide support to address these issues to help improve their performance (NHS Improvement, 2018a).

According to data from the NRLS website, the English NHS Ambulance Services reported 14,169 patient safety incidents from April 2017 to March 2018. The NRLS modified the way figures are compiled in 2016, making comparisons over similar time spans difficult; however, it is evident that the number of patient safety incidents has risen considerably. From July 2009 to June 2010, there were 4,132 PSIs reported, while from July 2014 to June 2015, there were 10,375 PSIs reported, representing a 2.5 fold increase over five years. Although

the number of PSIs dropped in the period between April 2015 to March 2016 and April 2016 to March 2017, from 13,300 PSIs to 11,923 PSIs, respectively, it has recently spiked again to 14,169 PSIs from April 2017 to March 2018 (NHS Improvement, 2018). Table 5 below compiles the data on all patient safety incidents reported in the NHS Ambulance Services from July 2009 to March 2018, including the various categories that incidents can be classified as depending on each particular case:

**Table 5: NRLS Data of Patient Safety Incidents**

<b>Incident Type</b>	<b>July 2009 - June 2010</b>	<b>July 2010 - June 2011</b>	<b>July 2011 - June 2012</b>	<b>July 2012 - June 2013</b>	<b>July 2013 - June 2014</b>	<b>July 2014 - June 2015</b>	<b>April 2015 - March 2016</b>	<b>April 2016 - March 2017</b>	<b>April 2017 - March 2018</b>
Access, admission, transfer, discharge (including missing patient)	1,135	1,342	1,085	1,300	1,669	2,670	3,056	2,746	3,919
Treatment, procedure	277	372	452	622	1,075	1,796	2,608	2,007	1,570
Medical device / equipment	455	620	645	1,091	637	806	1,381	1,320	1,343
Patient accident	827	992	1,001	820	787	1,029	1,083	1,194	1,227
Consent, communication, confidentiality	212	268	287	233	679	1,355	981	1,100	1,180
Infrastructure (including staffing, facilities, environment)	164	142	212	195	189	324	847	824	1,007
Clinical assessment (including diagnosis, scans, tests, assessments)	153	139	188	196	325	724	618	528	926
Medication	178	188	233	225	369	455	523	474	615
Implementation of care and ongoing monitoring / review	107	135	266	364	374	361	470	424	455
Documentation (including electronic & paper records, identification and drug charts)	38	49	48	72	68	105	196	173	293
Patient abuse (by staff / third party)	21	23	10	9	5	25	56	30	52
Disruptive, aggressive behaviour (includes patient-to-patient)	242	150	1	6	8	25	30	24	32
Infection Control Incident	16	10	4	12	11	20	8	17	27
Self-harming behaviour	11	4	9	13	8	10	5	10	15

Other	296	313	401	597	659	670	1,438	1,052	1,508
<b>Total</b>	<b>4,132</b>	<b>4,747</b>	<b>4,842</b>	<b>5,755</b>	<b>6,863</b>	<b>10,375</b>	<b>13,300</b>	<b>11,923</b>	<b>14,169</b>

(NHS Improvement, 2018a)

As the table above demonstrates, there has been a consistent rise in the number of patient safety incidents reported by the NHS Ambulance Services over the last decade, where individual types of incidents have steadily increased, as well as the number of incidents in total. The table above demonstrates that a significant proportion of patient safety incidents are related to issues with patient access, treatment, equipment, accidents, communication, infrastructure and clinical assessment, while other types of incidents represent a smaller proportion.

This sharp rise in patient safety incidents presents a current and future problem for patient safety in the NHS Ambulance Services, and with the significant increase in the number of 999 calls, it could be argued that the number of incidents may increase correspondingly in the future. However, while the growth in PSIs is substantial, it is unclear whether this rapid shift is due to an increased rate in the reporting of incidents that were previously overlooked, or if these numbers accurately reflect that incidents have more than doubled (National Advisory Group on the Safety of Patients in England, 2013). The ambulance and emergency services are notorious in the literature for having a poor reporting culture when compared to other care settings, and research has demonstrated that operational staff commonly do not report patient safety incidents or errors due to a fear of blame, punishment, job loss or losing their HCPC licensing, for example (Bigham et al., 2011; Kirk et al., 2018; O'Hara et al., 2014; 2015; Sinclair et al., 2018). In 2015, Sir Robert Francis released the Freedom to Speak Up review to address this issue, urging NHS organisations to develop an open and honest reporting culture with their staff (Francis, 2015). It is unclear how much influence this has had on staff in the NHS Ambulance Services as limited research is available; however, the North East Ambulance Service has noted an improved reporting culture in 2017, which may speak to the success of the Freedom to Speak Up review (North East Ambulance Service, 2017).

Given the lack of evidence in this area, interpreting the figures and determining their underlying causes are complex tasks as the increase could be due to the higher demand, an improved and more positive reporting culture, previous underestimation, or even a

convergence of all of these factors. As mentioned, the available literature is negligible in this area; however, some research has found that an increase in patient safety incidents reflected work-related stress and shift work, which is directly relevant to the NHS Ambulance Services and the growing service-user demand (Källberg et al., 2017; O'Hara et al., 2014; 2015; Park and Kim, 2013; Patterson et al., 2012; UNISON, 2015). According to Livingstone et al. (2007), Lowthian et al. (2011a), National Audit Office (2017), Toloo et al. (2011) and Wankhade (2011), it is also possible that reported PSIs have risen as paramedics are now dealing with an ageing and vulnerable population, as well as an increase in the responses to alcohol and mental health issues.

While the NHS Ambulance Services are attempting to cope with the considerable increase of demand by service users, as well as a rise in the number of reported patient safety incidents, they are also faced with severe resource issues that can have a significant impact on the safety of patients. These issues come in the form of debilitating staff shortages and a lack of sufficient funding to keep up with demand, both of which will be discussed in the following sections.

### **1.3.5 Resource Issues - Staffing Levels**

In England, the number of staff working for the NHS Ambulance Services has risen by approximately 2,000 in recent years, increasing from 30,400 in 2010 - 2011 to 32,400 in 2015 - 2016 (National Audit Office, 2017). In spite of this substantial growth in staff, the number of vacancies in the NHS Ambulance Services remains significant and is leaving the services critically understaffed (National Audit Office, 2017). Paramedics were officially added to the shortage of occupation list (SOL) in February 2015, highlighting a ten percent vacancy rate, or 1,250 of the approximately 12,500 paramedics in England at that time, resulting in an insufficient number to care for the increasing number of service users, or patients (Migration Advisory Committee, 2015; National Audit Office, 2017). The Migratory Advisory Committee (2015) analysed data from the Centre for Workforce Intelligence and identified that the significant increase in patient demand was one of the primary drivers of the paramedic shortage. Another contributing factor to the high number of vacancies is the fact that the NHS Ambulance Services are dealing with high levels of attrition by staff. The National Audit Office (2017) reported that the rate of employee turnover in the North West Ambulance Service NHS Trust (NWAS) alone rose from 4.7 percent to 9.6 percent from

2011/2012 to 2015/2016. Health Education England estimated that the rate of turnover would remain approximately nine percent annually until the year 2020, which is an increase from the past when it was closer to four or five percent per year (National Audit Office, 2017).

Paramedics are either leaving or thinking about quitting the NHS Ambulance Services for a variety of reported reasons, including their salary and rewards, rising demand and workload, stress, bullying from other staff and public misuse of the services, or inappropriate 999 calls which do not warrant an emergency response (National Audit Office, 2017; UNISON, 2015). Also adding to the high turnover rate is the increasing level of educational attainment by paramedics, qualifying them to work in other care settings, such as in walk-in clinics and GP surgeries, which offer more traditional and attractive work hours (National Audit Office, 2017; UNISON, 2015). The situation now facing the NHS Ambulance Services is dire for patient safety, with demand continuing to rise in the foreseeable future and front-line staff leaving the services in droves, additional pressure is placed on existing staff to bridge the gap (National Audit Office, 2017). As mentioned previously, higher workloads and shortages of personnel have been found to cause stress in healthcare professionals, and they have been referred to as significant concerns for patient safety (Flowerdew et al., 2012; Källberg et al., 2017; O'Hara et al., 2014). Research has indicated that staffing shortages and inadequate levels of resource have a negative impact on the perceptions of patient safety by staff, with paramedics citing them as risk factors when making decisions regarding the safety of patients (O'Hara et al., 2014; 2015; Smeds Alenius et al., 2013).

The NHS Ambulance Services have begun to address these problems and are focussing their efforts internationally, as there is a scarcity of qualified paramedics to recruit from within the United Kingdom (Peate, 2014). Ambulance Service NHS Trusts in England began to recruit from countries overseas around 2013, primarily from European countries and Australia (UNISON, 2015). For example, the London Ambulance Service (LAS) hired 175 paramedics from Australia to fill some of their remaining vacancies in 2015 (Wallis, Ross and Boyle, 2015). LAS continues to recruit overseas, and as of 2018, there are now 500 Australians employed by the service, making up ten percent of their paramedic workforce (London Ambulance Service NHS Trust, 2018). While there has been a success with international recruitment concerning the reduction of outstanding vacancies, Ambulance Service NHS Trusts have also recognised several difficulties, including extensive costs and

the return of overseas staff to their home countries (National Audit Office, 2017). Despite these issues, it is clear that more paramedics are required to be able to adequately respond to the growing number of 999 calls and transfers for 111 in England before the implications for patient safety worsen.

### **1.3.6 Resource Issues - Funding**

While demand for the NHS Ambulance Services continues to rise by approximately 5.2 percent annually, funding is not increasing at the same rate, causing alarm for patient safety and the future sustainability of the underfunded and overburdened services (National Audit Office, 2017). In 2015 - 2016, a substantial £2.2 billion of funding was allocated to the ten Ambulance Service NHS Trusts in England, with £1.78 billion of that total reserved for emergency care while the rest was used for the NHS 111 service and other needs (National Audit Office, 2017). These new funding figures represented a 16 percent increase from the period 2011 - 2012 to help with the rising utilisation of the services, as well as to account for inflation (National Audit Office, 2017). However, in the same period, the rate of 999 calls and transfers from the NHS 111 service grew by a staggering 30 percent, while attended incidents rose by nine percent (National Audit Office, 2017). Although the NHS Ambulance Services received this substantial influx of funding from their past rate in the period from 2011 to 2012, it remains unknown whether this amount of money was sufficient to confront the rising demand, attrition of staff, as well as inflation. Funding has direct implications for patient safety, as budget deficits can typically result in shortages of staff and insufficient resources, leading to less favourable or negative perceptions of patient safety by staff (Smeds Alenius et al., 2013). Without adequate levels of staff and resources, fewer paramedics will be available to deal with the rising demand and may lack the necessary tools to carry out treatments. Therefore, as demand is projected to maintain its growth, the NHS Ambulance Services will need to secure a level of funding or restructure their services in a way that is appropriate to meet these mounting pressures (Wankhade, 2018).

As the Ambulance Service NHS Trusts decide how to distribute their limited funding to meet the rising demand most effectively, certain concessions towards patient safety are inevitably made in the process. Research conducted by the NHS Support Federation found that budgets for training in the NHS Ambulance Services had been reduced between 2012 and 2014, with a £13.8 million cut to the North West Ambulance Service (NWAS) alone in 2014



(North West Ambulance Service, 2015). O'Hara et al. (2015) identified that staff training and development were factors influencing paramedic decision-making around patient safety, and with cuts to these at NWAS, potential risk factors may have been intensified. In 2011, the London Ambulance Service (LAS) had a budget deficit of £53 million and decided to cut costs by reducing the number of staff by 890 posts (London Ambulance Service NHS Trust, 2011). Since then, LAS has reconfigured and was able to record a budget surplus of £6 million in the 2016 - 2017 fiscal year, as well as improve their CQC rating to 'Good', highlighting their improvements (London Ambulance Service NHS Trust, 2018). However, while LAS is in an arguably better standing financially and according to CQC measures, the total impact of their reconfiguration on patient safety remains unknown. The substantial change to staffing levels, for example, was likely to have produced large-scale reverberations felt throughout their NHS Trust concerning the organisational culture, as well as adequate levels of resource, both which ultimately have a significant influence on the safety of patients. Situations similar to the one in LAS are ongoing in all of the Ambulance Service NHS Trusts in England, as each organisation attempts to match their finite levels of spending with the growth in demand. For example, in the period from 2015 - 2016, the NHS Ambulance Services had an operating shortfall of £12 million, with four trusts reporting losses (National Audit Office, 2017).

Amongst the sharp rise in demand, cuts to the budget and a shortage of paramedics, significant risks to patient safety are present in the NHS Ambulance Services. Therefore, there is a need to explore the perceptions of staff according to these issues and their impact on patient safety across a range of organisational levels and Ambulance Service NHS Trusts (NHS Support Federation, 2015).

## **1.4 CHAPTER SUMMARY**

This initial chapter aimed to first introduce the reader to patient safety in healthcare more broadly, before focussing in on the ambulance and emergency services more specifically. Following an overview of the emergence of the concept of patient safety, the study's rationale and the definition of patient safety selected for this study were then discussed, as well as the background of the NHS Ambulance Services, including the role of the paramedic and the staffing structure within each Ambulance Service NHS Trust. This chapter then concluded by emphasising the current challenges facing the NHS Ambulance Services,

thereby contextualising the issues relating to staff perceptions of patient safety and underlining the overall significance of the study.

The following chapter will summarise, review and critically appraise the existing evidence in the literature around staff perceptions of patient safety.

## **Chapter 2 - LITERATURE REVIEW**

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### **2.1 INTRODUCTION**

The previous chapter presented a comprehensive background concerning the role of the NHS Ambulance Services and its developments over the years; it also included a description of how the Ambulance Service NHS Trusts are organised and some of the patient safety issues they currently face. Following an overview of the concept and description of some of the issues encountered with patient safety research in the ambulance and emergency services, the overarching aim of this chapter is to collate and critique all of the content, methodological assumptions and arguments found in the research published around this topic. Thus, the context of this study will be established within the confines of the broader literature landscape. This chapter begins by describing the methodological approach to the literature review and then follows with a synthesised account of the research around the perceptions of patient safety in the ambulance and emergency services.

### **2.2 NARRATIVE REVIEW METHODOLOGY**

Conducting a literature review is a fundamental and vital part of the research process in that it provides a platform to critically gather, organise and analyse information from a variety of sources, aiding in the identification of current gaps in knowledge (Hart, 2018). A robust and well-designed literature review builds the foundation for future research and learning in an area, thereby advancing the development of theory and determining where, or if any, additional research is required (Webster and Watson, 2002). Conversely, literature reviews that are weak methodologically, include irrelevant studies or are not rooted in theory, can lead to an arguably weak piece of research overall (Maggio, Sewell and Artino, 2016; Randolph, 2009). Various types of literature reviews exist, the most common being systematic reviews and traditional or narrative reviews, and the selection of one is dependent on the reason for the research (Hart, 2018). A narrative review can provide a descriptive qualitative synthesis around the evidence in a specific area, although through methods often viewed as subjective and prone to reviewer bias (Tranfield, Denyer and Smart, 2003). Systematic reviews, on the other hand, are more rigorous and aim to reduce the level of bias by identifying, categorising and critically evaluating all pieces of research

in a specific area (Tranfield, Denyer and Smart, 2003). This latter type of review relies on a systematic methodology containing explicit, reproducible criteria, whereas the methods of narrative or traditional reviews can be more variable (Collins and Fauser, 2005; Ferrari, 2015; Okoli and Schabram, 2010).

Ultimately, a narrative review was selected over that of a systematic review, as it was considered a more suitable method for critically assessing and synthesising the literature around an area with minimal previous focus, such as the perceptions of patient safety in the ambulance and emergency services (Collins and Fauser, 2005). Narrative reviews are also more appropriate to answer broad questions, such as the one informing this study, rather than questions which are more specific and focussed, which would be suitable for systematic reviews (Cook, 1997). Therefore, due to the multiplicity of the subject base, including varied methodological approaches and sample groups, a systematic review was determined to be inappropriate as this method is more suitable for a specific and clearly defined area of focus (Pae, 2015). In addition, systematic reviews are more suited to reviewing an extensive and comprehensive body of literature and are less suitable for areas of research where the literature is scarce, such as with the perceptions of patient safety in the ambulance services (Cook, 1997).

Beyond the determined unsuitability of systematic reviews for this study, a narrative review was selected as they are strengthened by their flexible, non-systematic approach which allows for a collective interpretation of the available qualitative and quantitative research while investigating newer areas and avoiding duplicates (Cronin, Ryan and Coughlan, 2008; Ferrari, 2015; Grant and Booth, 2009). While this approach has many strengths, it also has some limitations. It is criticised for the perceived absence of transparency around its methods, as well as a lack of an established and agreed set of instructions for conducting this type of review (Dixon-Woods et al., 2005; Mays, Pope and Popay, 2005; Snilstveit, Oliver and Vojtkova, 2012). Therefore, it was essential that a structured approach was taken with the narrative review, which demonstrated a clear and transparent set of methods, and followed an established set of instructions found in the literature (Cooper and Hedges, 1993; Hart, 2018). While not wholly reproducible, extensive justification of the processes involved and choices made facilitated a more robust review of the literature, thus strengthening the positioning of the research project against the background of relevant literature (Mallett et al., 2012).

## **2.3 REVIEW AIM AND QUESTION**

As mentioned above, this narrative review of the literature utilised a structured approach and aimed to identify, synthesise and appraise the content, methodological arguments and assumptions found in the available evidence concerning the staff perceptions of patient safety in the ambulance and emergency services.

A single overarching research question was developed prior to conducting the literature review, which is as follows: *what are the staff perceptions of patient safety in the NHS Ambulance Services?*

## **2.4 PLANNING THE NARRATIVE REVIEW**

The care setting of the ambulance and emergency services represents an incredibly broad and complicated area, and the term 'patient safety' itself contributes to that complexity as it is commonly defined as the prevention of harm to patients; an imprecise definition that can relate to anything from triaging at the point of call, to strapping patients onto a stretcher (Mitchell, 2008). An argument can be made that any study related to patient harm within healthcare would be suitable to include and review, as they technically touch upon the topic of patient safety. However, given that this study is focussed and concerned with the perceptions of staff towards patient safety within the NHS Ambulance Services, this all-inclusiveness would serve as an impossible task and distraction from the study's aim. Therefore, it was fundamental to the strength of this research that the methods of the review are outlined and a rigorous search strategy was developed and utilised, with a justification for my choices that will remain transparent and supported throughout the entirety of this chapter and overall thesis.

## **2.5 NARRATIVE REVIEW METHODS**

The methods utilised are based on the principles of a traditional literature review and include a thorough search of the literature, critical selection process, discussion and evaluation, and final structured presentation of the findings. A general framework for this style of literature review can be found outlined below in Table 6, including the seven individual steps to the literature review informed by Hedges and Cooper (1993) in Hart (2018), with a description of their application to the current study:

**Table 6: Steps of a Literature Review**

Individual Steps for Narrative Review		Application to Research Project
1.)	Identify a research problem and develop a research question(s) that will help to provide an answer.	<i>What are the staff perceptions of patient safety in the NHS Ambulance Services?</i>
2.)	Construct a search strategy to locate relevant and available literature, and outline criteria for the inclusion and exclusion of evidence.	<p>Relevant search terms and databases searched with the following databases: CINAHL Complete and PubMed, including hand searching research articles through their references. The PubMed database encompasses all of the MEDLINE and Embase records.</p> <p>A set of inclusion/exclusion criteria was developed to select research articles.</p> <p>All study designs, including qualitative, quantitative and mixed methods, were included in the review. Peer-reviewed studies were preferred, however, given the minimal literature in this area, some PhD theses and conference proceedings were considered when establishing the evidence-base.</p>
3.)	Develop specific methods to aid in the summarising and synthesising of the literature.	An approach based on the principles of a narrative review was followed to combine and assess the available literature by way of ' <i>narrative juxtaposition</i> ', or through examining the different formats of evidence together (Dixon-Woods et al., 2005, p. 47). This method was selected as it is a comprehensive approach that facilitates the integration and synthesis of both qualitative and quantitative evidence; it is particularly suitable when aiming to establish the setting and context for the argument (Collins and Fauser, 2005; Kastner et al., 2012).
4.)	Assess the methodological quality of the identified evidence, and detail the processes involved.	<p>The quality of the articles was reviewed and appraised through the suitable CASP Appraisal Checklists developed by the Critical Appraisal Skills Programme (2018).</p> <p>Any outstanding issues or questions regarding the quality of the available research were also discussed with the supervisory team for clarification and guidance concerning its application within the review.</p>
5.)	Synthesise the pertinent arguments, content, and information from the literature.	<p>Following the quality appraisal of each study, an evidence table was then constructed to summarise the relevant studies included in the final narrative review.</p> <p>This evidence table (Table 10) can be found further below.</p>
6.)	Conceptualise a working framework of the major themes, questions, methods and methodological assumptions.	Following the identification of the major themes in the evidence table, a framework was conceptualised to organise and outline any pertinent information. With support from the framework, which included the evidence table described above in the preceding step, essential themes were then drawn from the studies,

		which included not only their content but their methods and methodological underpinnings as well. This 'mapping' of the literature presented the substance and arguments of the studies in a more visually accessible format, which aided in the subsequent step.
7.)	Establish evidence-based conclusions from the review of the literature around the methodological assumptions, practice, policy and future research, including any present gaps in the research.	The framework was assessed to draw evidence-based interpretations from the existing research. This step was vital in forming conclusions in this topic area, as well as in establishing the present gaps in the literature that require further investigation, therefore providing adequate justification for this study.

Adapted from Cooper and Hedges (1993) for Hart (2018)

### 2.5.1 Search Strategy

Effectively searching the literature requires an approach that is both structured and meticulous, and one such approach would be to adhere to an organised search strategy (Department of Health, 2013). Preliminary searches began after consulting the supervisory team, experts in the topic area, and library staff within Edge Hill University, all of whom aided in the identification of suitable databases and search terms and provided structure to the overall approach. A validated tool for finding patient safety-related research developed by Tanon et al. (2010) was also routinely referenced with the aim of conducting searches that would result in a high level of precision and sensitivity. Relevant literature was identified primarily through the searching of online databases, and the concepts of 'snowballing' and 'reverse snowballing', common within systematic literature reviews, were adopted for use in this narrative review to locate publications that cited the discovered literature, as well as studies that were included within their reference lists (Ridley, 2012; Sayers, 2007). The use of search engines, such as Google and Google Scholar, was also incorporated as it was essential to locate grey literature, including relevant reports, policy documents, databases and other unpublished but valuable information produced by the NHS Ambulance Services or their international equivalents (Godin et al., 2015). These searches often led to databases of PhD research projects, such as the British Library EThOS and Paramedic PhD, which were then also routinely examined to detect publication bias, as well as review work that had not yet been published, but still contained information applicable to this review (Müller et al., 2013).

### 2.5.2 Databases

The databases selected for the literature search can significantly influence both the number and relevance of identified publications; the choice of databases, in turn, has the potential to alter the overall conclusion of the review, as well as the time and effort spent conducting it (Wright, Golder and Lewis-Light, 2015). While it remains essential to maximise the sensitivity of the search through the use of multiple appropriate databases, it is also necessary to maximise specificity to reduce the number of irrelevant publications, therefore demonstrating the importance of selecting the right, or most suitable, databases. Bramer et al. (2017) argued that, at a minimum, the following databases should be searched when conducting a systematic review of the literature: MEDLINE, Embase, Web of Science and Google Scholar. However, as an approach based on the principles of a narrative review was adopted, the choice of databases was informed by Tanon et al. (2010), who developed a validated search strategy to guide the identification of patient safety-related literature and suggested searching MEDLINE, Embase and Cumulative Index to Nursing and Allied Health Literature (CINAHL).

As per Tanon et al. (2010) and as mentioned earlier in Table 6, the following databases were selected to identify suitable literature for this narrative review: Cumulative Index to Nursing and Allied Health Literature (CINAHL) Complete and PubMed. While Tanon et al. (2010) suggested searching Embase and MEDLINE, PubMed was chosen instead as this database includes all MEDLINE records as a subset (KEMH Medical Library, 2019). MEDLINE also contains all of the literature found in Embase except for pharmacy and drug journals, which were not considered appropriate for this research project. To avoid substantial overlap and duplicate findings, the PubMed database was determined to provide sufficient coverage (KEMH Medical Library, 2019). Both CINAHL Complete and PubMed were determined to be the most relevant and suitable databases for this literature review as they represent a wide range of international peer-reviewed journals, which provide broad coverage of primary studies for the synthesis of literature around the perceptions of patient safety in the ambulance and emergency services. CINAHL Complete, in particular, was selected as it is an extensive and comprehensive database that represents a substantial number of journals that have a specific emphasis on allied health and nursing literature; while PubMed provides coverage of approximately 27 million publications related to



medical, biomedical and life sciences research (Fiorini, Lipman and Lu, 2017; Wright, Golder and Lewis-Light, 2015).

The search strategies developed by Tanon et al. (2010) also advised for a temporal timeline of 2000 to 2006 when searching the patient safety literature. However, given the lack of available research in this area and as their study was published in 2010, this guidance was considered dated, and no temporal constraints were set for the searches. Some research has argued that solely searching online databases will locate only half of the literature in the pre-hospital setting (Wilson et al., 2002). Although less important in a narrative review when compared to that of a systematic review, as a PhD study, no funding was available to assist in the extensive hand searching of data unavailable online. Despite this limitation, the literature search was routinely repeated throughout the PhD from 2016 to 2019, with the first search conducted on 17 October 2016, and the final search on 15 July 2019. Experts in the topic area were also regularly contacted to probe their knowledge of ongoing research, thereby ensuring that the literature review remained as comprehensive and current as possible.

### **2.5.3 Search Terms**

With the aim of conducting a robust and rigorous search while also achieving a balance between specificity and sensitivity, the use of synonyms, truncation and Boolean Operators were employed when searching the two databases. The search technique truncation (\*) was beneficial in capturing the plural versions of search terms, as well as any variations. For example, literature surrounding the terms paramedical, paramedicine and paramedics are encompassed by the truncation paramedic\*. The use of Boolean Operators broadened the searches to include synonyms, while simultaneously narrowing the searches by requiring a combination of all of the search terms. This structured and comprehensive approach ensured that the possibility of missing key publications was reduced while identifying all relevant evidence available in the literature. Although a language bias would potentially be introduced in the review, the searches were limited to the English language as no budget was available to translate publications written in other languages (Morrison et al., 2012). In addition, studies which were conducted within a low- or middle-income country (LMIC) were excluded as it was unknown how comparable the healthcare models would be to the NHS due to the unique operational and methodological challenges faced in these countries

(Razzak et al., 2019). It was determined that research from LMICs would not provide data which was transferable to the NHS Ambulance Services, as their service configuration is too dissimilar to that of NHS ambulance services for the information to be meaningful and relevant (Fisher et al., 2015). Therefore, it was determined that these studies should be excluded within the narrative review, as the ambulance services in western countries are sufficiently similar for relevance to this study. Research, which had a specific focus on certain medical procedures, such as intubation, or on particular patient groups, like paediatrics, were also excluded, as the aim of the literature search was to identify studies which explored the perceptions of patient safety in a more general sense. However, no other restrictions were used.

The complete search strategy utilised in this literature review for both CINAHL Complete and PubMed can be found below in Table 7 below. The specification and inclusion of the search strategy, timeline and databases used enables the reader to replicate the search of the literature and increases the transparency of the overall literature review.

**Table 7: Search Strategy**

<b>CINAHL Complete</b>	TI ( ( perception* OR attitude* OR view* OR belief* ) AND patient safe* AND ( ambulance* OR paramedic* OR emergency service* OR pre-hospital* OR prehospita* ) ) OR AB ( ( perception* OR attitude* OR view* OR belief* ) AND patient safe* AND ( ambulance* OR paramedic* OR emergency service* OR pre-hospital* OR prehospita* ) )
<b>PubMed</b>	((perception*[Title/Abstract] OR attitude*[Title/Abstract] OR view*[Title/Abstract] OR belief*[Title/Abstract]) AND patient safe*[Title/Abstract]) AND (ambulance*[Title/Abstract] OR paramedic*[Title/Abstract] OR emergency service*[Title/Abstract] OR pre-hospital*[Title/Abstract] OR prehospita*[Title/Abstract])

#### 2.5.4 Screening

The titles and abstracts were screened for potential relevance to the review and full text articles were then assessed for eligibility against the review inclusion and exclusion criteria. Initially, this screening was done by myself. However, to reinforce validity and quality of the literature review, my selections were then considered and discussed with the supervisory team until there was an agreement.

### 2.5.5 Inclusion and Exclusion Criteria

The inclusion and exclusion criteria listed in the table below were shaped by the focus, aim and scope of the narrative review (Randolph, 2009):

**Table 8: Inclusion and Exclusion Criteria for Literature Search**

Inclusion Criteria	Justification
Empirical studies of any design	Demonstrate relevance to the study aim with transferable findings to different populations and settings.
Pertained to exploring perceptions, opinions and views of aspects concerning patient safety in a broad and more general sense	
Included participants who were staff in the ambulance or emergency medical services (EMS)	
Exclusion Criteria	Justification
Did not detail their methods, such as editorials or commentaries	Lack of relevance to study aim or presenting barriers to a successful critical appraisal of its content.
Not written in the English language	
Off theme, for example, perceptions of traffic accidents or terroristic attacks	
Focussed on a specific clinical procedure or group of patients, such as paediatrics	
Conducted in a low- or middle-income country (LMIC)	

### 2.5.6 Quality Assessment and Critical Appraisal of Literature

Critically appraising the quality of research is essential in ensuring that the studies are reliable, trustworthy, and relevant to the area of focus, and although qualitative research has become more prevalent within health research, it remains challenging to assess its quality in an objective manner (Katrak et al., 2004; Lingard and Kennedy, 2010; O'Brien et al., 2014). As the approach to a literature review dictates the interpretation of research articles, it can have a profound impact on the results, and so the inclusion of a validated critical appraisal tool (CAT) has the potential to strengthen an entire research project (Katrak et al., 2004). Multiple critical appraisal tools now exist that aid in examining the methodological rigour of research through the use of a systematic process that considers various elements within a research article, thereby increasing the quality of the literature review (Crowe, Sheppard and Campbell, 2012; Katrak et al., 2004). However, while CATs

are seen as useful evaluative tools, some scepticism is held around their reliability, as findings of a critical review demonstrated that the quality of existing CATs is highly variable (Crowe and Sheppard, 2011). Crowe and Sheppard (2011) argued that the development of many CATs are done with no regard for basic research principles, relevant evidence to guide their design, and lack any testing for reliability or validity. Therefore, before critically assessing the quality of the literature used in this review, it was imperative first to identify and select CATs that were extensively tested and validated, as well as appropriate for the types of studies included.

No universally adopted method is available for critically appraising and integrating research across multiple paradigms. However, as the literature search in the current study produced publications with a diverse set of methodological approaches, it was necessary to select an appraisal toolkit that allowed for a comprehensive assessment of each type. Ultimately, the Critical Appraisal Skills Programme (CASP) (2018) was chosen to aid in critiquing the methodological rigour and quality of each article included in the literature review. The CASP guidelines represent eight individual checklists for evaluating research, including that of randomised controlled trials (RCTs), economic evaluations, systematic reviews, diagnostic studies, qualitative studies, mixed-methods studies, case-control studies, cohort studies and clinical prediction rules (Critical Appraisal Skills Programme, 2018). Each of these eight CASP checklists enables the user to review the content of studies for their validity, results and relevance, and the CASP toolkit was determined to be suitable to assess the diverse methodological approaches and study designs included in the narrative review (Burls, 2009). An advantage of using CASP checklists is that they provide a consistent and validated method to appraise a broad range of literature; however, some limitations to this toolkit remain present. Although the CASP tools provide a framework to evaluate the research critically, the robustness of these tools is limited as they can only offer an approximation of quality for each relevant study design, leaving the final interpretation up to the reviewer. While appraising the quality of research is challenging, Harrison et al. (2016) argued that tools like CASP are necessary to facilitate the nuanced assessment of the individual components of a study, instead of assigning an overall marker of 'high quality' or 'low quality', for example.

Although conducted in 2004, a systematic review of critical appraisal tools identified that almost half of the available tools at that time utilised a numerical score to quantify the level

of research quality. However, the CASP tools do not summarise the evaluation in this number-based format, and instead rely on the user to answer with the option of 'Yes', 'No', or 'Can't Tell' (Critical Appraisal Skills Programme (CASP), 2018; Katrak et al., 2004). The CASP checklists were modified by myself to incorporate a numerical element that would simplify their appraisal and comparison, thus facilitating a more objective system of ranking or scoring each article to aid in its interpretation. A number value of two was given to boxes that were ticked 'Yes', zero for any boxes ticked 'No', and the option of 'Can't Tell' was assigned a score of one to account for any uncertainty as to the selection of 'Yes' or 'No'. The rating scale of each article, therefore, ranged from a score of zero, representing the lowest possible marker of quality, to '20', which represented the highest. To further illustrate the interpretation of the CASP scores within this narrative review, a score of 19 would be considered as near perfect according to the criteria, while a score of 15 represents 75 percent of maximum study quality. Although a similar technique has been applied in other studies, it is essential to note that the modification of the CASP checklists for this research project was not independently validated (Katrak et al., 2004). While the importance of identifying a CAT which was extensively tested and validated was emphasised earlier, it was felt that this modification did not significantly alter the measurement criteria and only introduced a scoring algorithm, thereby making it easier to compare and contrast studies and convey their quality to the reader.

The Quality Assessment Score (QAS) attributed to each article served as a point of discussion within the narrative review and can be found in the evidence table (Table 10).

### **2.5.7 Terms**

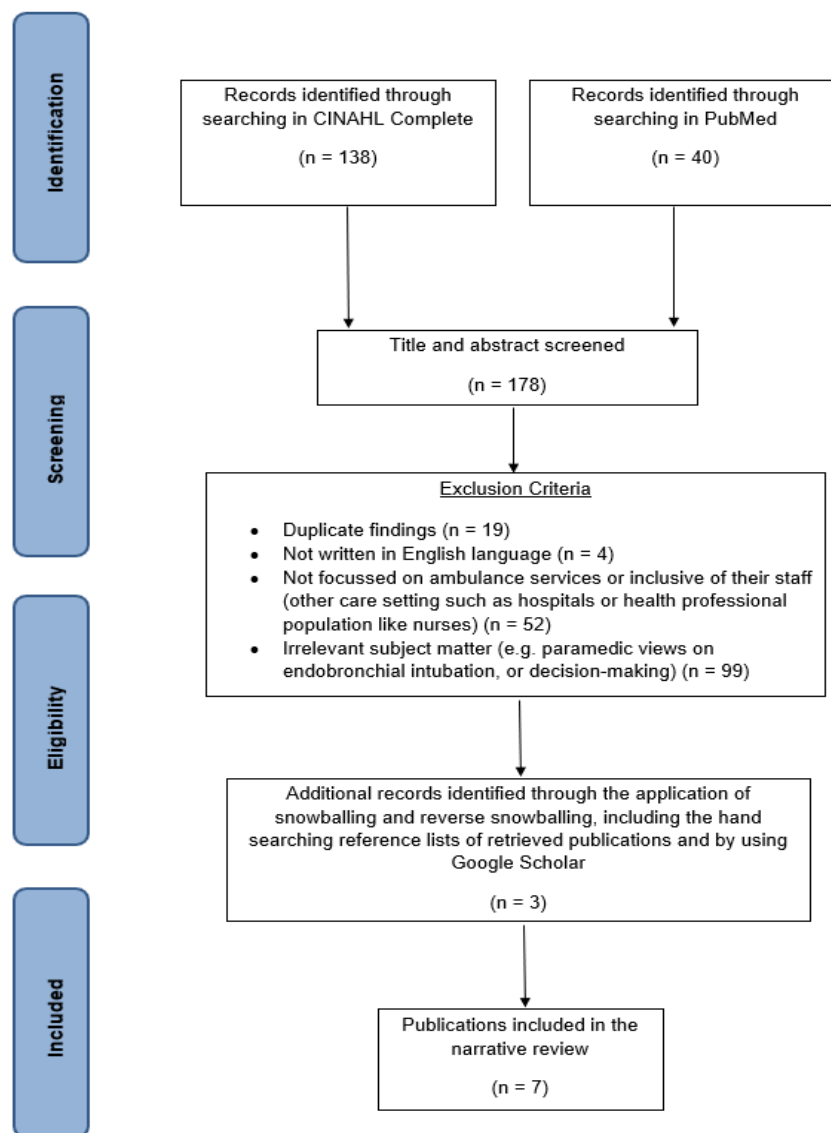
The research contained within this literature review was conducted within a variety of international contexts and settings, where the terminology used to describe the ambulance and emergency services and its staff varies. The abbreviation and definition sections near the beginning of the thesis aim to clarify the changing terminologies and can act as a reference.

## 2.6 SEARCH RESULTS

A flow diagram of the results of the literature search and the subsequent selection process can be found in Figure 7 below. This diagram was based upon the principles of the PRISMA guidelines to provide clear and structured reporting of the selection process (Moher et al., 2009).

### 2.6.1 Flow Diagram Literature Selection

Figure 7: Flow Diagram of the Selection Process



(Moher et al., 2009)

None of these nine studies addressed the research question directly within the ambulance and emergency services, while relevant publications concerning separate healthcare professions, such as nursing, were much more prevalent. Due to the limited amount of evidence available, it was determined that any studies with findings tangentially related to the broad perceptions of patient safety in the ambulance and emergency services were to be included. This broad approach resulted in a diverse set of study foci found within the search results, which are detailed further in Table 10. For example, as no existing literature shared the same research aim of this study, those which explored the perceptions of patient safety issues, adverse events and safety culture, were included if they met the other inclusion and exclusion criteria highlighted in Table 8 above.

In total, nine studies from a number of different countries met the review inclusion criteria. There were four studies from the United Kingdom, two from the United States of America, two from Canada and one from Australia. Three pieces of research identified by the literature search utilised a quantitative approach, while mixed-methods and qualitative studies each constituted three articles, respectively. The literature was grouped to two themes which arose, including 'patient safety issues and risks', as well as 'reporting incidents and blame culture'. As the current project takes place within England, the studies were discussed within the context of their geographical location to contextualise the gaps both overseas, as well as within the United Kingdom and NHS Ambulance Services, more specifically.

### **2.6.2 Staff Perceptions of Patient Safety in the Ambulance Services**

The unique nature of international healthcare systems and the varied composition of their ambulance and emergency services can limit the application of a study's findings beyond a country's borders. As the current research project takes place within England, the literature review was structured to contextualise the available evidence from both the United Kingdom and from an international perspective to identify the existing relevant literature, as well as to highlight the overall gaps. The studies from overseas established the context and set the scene for the articles from the United Kingdom, thereby contextualising this research within the broader literature landscape.

The individual studies and the countries in which they are categorised are outlined below, as they provide structure and shape the review. The table below provides the reader with a reference for the narrative review, including an outline of the authors, year, country and methodological approach.

**Table 9: Structure and Organisation of Literature Review**

<b>Country of Origin</b>	<b>Authors, (Year) - Country</b>	<b>Methodological Approach</b>
<i>Overseas Literature</i>	Atack L; Maher J, (2009) - Canada	Qualitative
	Fairbanks RJ; Crittenden CN; O’Gara KG; Wilson MA; Pennington EC; Chin NP; Shah MN, (2008) - United States of America	Qualitative
	Bigham B; Bull E; Morrison M; Burgess R; Maher J; Brooks S; Morrison L, (2011) - Canada	Mixed-Methods
	Patterson PD; Huang DT; Fairbanks RJ; Simeone S; Weaver M; Wang HE, (2010) - United States of America	Quantitative
	Gallego B; Westbrook MT; Dunn, Adam G; Braithwaite J, (2012) - Australia	Quantitative
<i>United Kingdom Literature</i>	O’Hara R; Johnson M; Siriwardena AN; Weyman A; Turner J; Shaw D; Mortimer P; Newman C; Hirst E; Storey M; Mason S; Quinn T; Shewan J, (2015) – United Kingdom	Qualitative
	Fisher JD; Freeman K; Clarke A; Spurgeon P; Smyth M; Perkins GD; Sujan MA; Cooke MW, (2015) - United Kingdom	Mixed-Methods
	O’Cathain A; Knowles E; Bishop-Edwards L; Coster J; Crum A; Jacques R; James C; Lawson R; Marsh M; O’Hara R; Siriwardena AN; Stone T; Turner J; Williams J, (2018) – United Kingdom	Mixed-Methods
	Chesters A; Grieve PH; Hodgetts TJ, (2016) - United Kingdom	Quantitative

Beyond the information detailed above, the evidence table below presents a summarised account of the studies included in the narrative review concerning the perceptions of patient safety in the ambulance and emergency services. These nine studies were categorised by their respective title, author(s)/year, country, methodology and methods, number of participants, study focus, quality assessment score (QAS) and main findings. The diverse nature of the nine selected articles is highlighted by the variable number of participants, types of staff sampled, countries of origin and methodological approaches. The quality assessment scores (QAS) of the studies, as guided by the CASP checklists, varied only 77 slightly from 16 to 20. It is important to note that while these similar CASP scores suggest



high levels of quality, they do not accurately represent their standards of evidence (Burns, Rohrich and Chung, 2011).

**Table 10: Evidence Table of Included Studies**

Title	Author(s)/ Year	Methodology/ Methods	Country	Participants	Study Focus	QAS	Main Findings
Emergency Medical and Health Providers' Perceptions of Key Issues in Prehospital Patient Safety.	Atack and Maher (2010)	Qualitative - Semi-structured interviews	Canada	16 Emergency Medical and Health Providers.	Perceptions of key patient safety issues by staff in prehospital setting.	18/20	The interviews with participants identified several key issues affecting patient safety, including clinical decision making, education of staff, and the relationship between EMS and healthcare. The patient safety issues raised by participants did not include those identified as significant in the literature.
Emergency Medical Services Provider Perceptions of the Nature of Adverse Events and Near-misses in Out-of-hospital Care: An Ethnographic View.	Fairbanks, et al (2008)	Qualitative - multi-method (semi-structured interviews and two focus groups)	United States of America	Semi-structured interviews were conducted with 15 emergency medical service (EMS) providers, and two focus groups contained a total of 23 participants.	Examining the emergency medical services providers perceptions around adverse events and near misses during care out-of-hospital.	18/20	The authors determined that near misses and adverse events were common within out-of-hospital care in the emergency medical services. However, they also identified a culture in the services that prevented staff from reporting these incidents. A majority of participants felt that these near misses and adverse events were caused by systemic problems in the organisation, as well as shortcomings and a scarcity of alternative care providers. The responses from participants, both during interviews and focus groups, also demonstrated that emergency medical services foster an environment prone to criticising others, blaming other care settings for issues, as well as hostile working relationships.
Patient safety in emergency medical services: Executive summary and	Bigham, et al (2011)	Mixed-methods	Canada	Interviews were conducted with an unspecified number of key informants, which then informed the discussion with 52 EMS and patient	Defining the strategic goals for improving patient safety within the emergency medical services (EMS) in	16/20	Participants perceived clinical judgement and training to be the most critical patient safety risk facing the emergency medical services (EMS) in Canada. The authors also identified that blame culture and a lack of training were seen as critical patient safety issues, while participants reported that vehicle

recommendations from the Niagara summit.				safety experts at a 1-day summit.	Canada.		collisions were of little concern. Bigham et al. (2011) developed a list of nine strategic priorities for improving patient safety in the EMS.
Variation in Emergency Medical Services Workplace Safety Culture.	Patterson, et al (2010)	Quantitative - Survey (EMS-SAQ)	United States of America	1,715 emergency medical staff, including paramedics and emergency medical technicians.	Investigating the perceptions of safety culture in emergency medical services agencies.	18/20	The results of this study demonstrate that reported perceptions of safety culture are highly variable within the sample of staff in the emergency medical services, with staff in some care settings scoring highly, while others scored poorly. Agencies involved with air transport scored higher across all dimensions of safety culture using the Safety Attitudes Questionnaire (SAQ). The authors noted that participants with a higher number of patient contacts per year scored lower on the safety culture questionnaire, indicating a poorer perception of patient safety.
Investigating patient safety culture across a health system: multilevel modelling of differences associated with service types and staff demographics.	Gallego, et al (2012)	Quantitative - Survey (SAQ)	Australia	14,054 health staff.	Investigating differences in patient safety culture across various types of services.	18/20	Differences in the attitudes of staff were identified across the 18 types of services, including the metropolitan ambulance service where more negative patient safety cultures were reported. The results also demonstrated that high-level management staff reported more positive perceptions of patient safety than their lower-level counterparts.
A qualitative study of systemic influences on paramedic decision making: care transitions	O'Hara, et al (2015)	Qualitative – Multi-method (observations, digital diaries and three focus groups)	United Kingdom	57 participants were observed over 34 shifts, ten participants completed digital diaries and three focus groups contained a total of 21 participants.	Exploring the systemic influences on paramedic decision-making in the English NHS Ambulance Services, including risk	20/20	The following systemwide influences on paramedic decision-making were highlighted by the authors, including patient demand, prioritisation of performance, alternative pathways, tolerance for risk, training and staff development, communication and available resources. The study emphasised the increasingly complex

and patient safety.					factors and care transitions.		medical decisions that paramedics are now facing, as well as the systemwide, or organisational, influences, which exacerbate the risk to patient safety.
Patient safety in ambulance services: a scoping review.	Fisher, et al (2015)	Mixed-methods	United Kingdom	Eight participants, including roles such as the medical director, clinical governance and risk management lead, developed the survey measure. Seven medical directors were then involved in completing the questionnaires.	Understanding how various groups of staff in the NHS Ambulance Services view patient safety issues.	19/20	The most significant risks impacting patient safety were the delays when accessing hospitals and during the process of handing over the patient to the A&E departments. Medical directors were less concerned about issues like medication errors, the mix of skill sets in clinicians, and allocating patients in sites with co-locations.
Understanding variation in ambulance service non-conveyance rates: a mixed methods study.	O'Cathain et al (2018)	Mixed-methods	United Kingdom	In one strand of the study, 49 participants from the NHS Ambulance Services were interviewed, and in another strand, 20 participants were interviewed and observed for 120 hours.	Exploring the factors influencing the differences between rates of conveyance in the NHS Ambulance Services.	20/20	Through their qualitative work, authors identified that participants believed that a large number of factors, including patient, call, organisational, emergency and urgent care system and national characteristics, had an impact on the decision-making behind non-conveyance, which in turn affected patient safety. From the quantitative work, the authors found that factors clarified the reasons for the variation at the ambulance service-level once they were adjusted for patient-level factors. These factors included the number of calls responded to by advanced paramedics, the perceptions of ambulance service staff concerning the value attributed to the advanced paramedic workforce and the opinion that the senior management was averse to risk around non-conveyance.

Perceptions and culture of safety among helicopter emergency medical service personnel in the UK.	Chesters, et al (2016)	Quantitative - Survey (developed by authors)	United Kingdom	100 helicopter emergency medical services (HEMS) staff, including doctors, paramedics and pilots.	Describing and comparing the perceptions and attitudes towards patient safety, culture and risk in HEMS staff.	17/20	Most participants perceived the (HEMS) to be safe, while one third who did not feel it was safe appeared to have been negatively influenced by a previous incident or crash. Large variation in the reporting of patient safety incidents was attributed to under-reporting in HEMS.
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\*QAS = Quality Assessment Score

### **2.6.3 Patient Safety Issues and Risks**

As previously mentioned, the first major theme which emerged from the critical synthesis of the literature concerned patient safety issues and risks, where participants reported existing issues which represent a significant risk to patient safety in the ambulance and emergency services. Of the nine total studies included in this narrative review, seven of them identified patient safety issues and risks according to their participants (Atack and Maher, 2010; Bigham et al., 2011; O'Hara et al., 2015; Fisher et al., 2015; O'Cathain et al., 2018; Fairbanks et al., 2008; Chesters, Grieve and Hodgetts, 2016). Except for Chesters, Gries and Hodgetts (2018), these seven studies predominantly utilised qualitative or mixed-methods methodological approaches, where they captured the perceptions of patient safety issues and risks through semi-structured interviews and focus groups. The two studies, which did not touch upon the patient safety issues and risks, were Patterson et al. (2008) and Gallego et al. (2012), who both utilised the Safety Attitudes Questionnaire (SAQ). This standardised survey tool did not allow participants to identify and explore perceptions of patient safety issues and risks. However, regardless of the varied methodological approaches, foci of the studies, sample groups, as well as the different countries included in this narrative review, these seven studies identified a broad range of patient safety issues and risks (Atack and Maher, 2010; Bigham et al., 2011; O'Hara et al., 2015; Fisher et al., 2015; O'Cathain et al., 2018; Fairbanks et al., 2008; Chesters, Grieve and Hodgetts, 2016).

Somewhat unsurprisingly, patient safety issues and risks emerged as a prominent theme in this narrative review as the focus of the search strategy was to identify studies which explored the perceptions of patient safety in the ambulance and emergency services. As patient safety concerns the prevention of harm, it was reasonable to expect that studies would explore what puts patients and their safety at risk in the ambulance and emergency services. While these studies investigated the perceptions of patient safety issues and risks, the findings of these studies were largely variable as participants predominantly reported different patient safety risks, as well as emphasised various risks more strongly. These differences were understandable given the range of staff sampled, from paramedics to patient safety experts, as well as the countries they were conducted in, as Australia, the United States, Canada and the United Kingdom have different populations and healthcare systems. However, although there were many differences, some clear commonalities did emerge, as clinical judgement and training were arguably given the most emphasis by

participants, irrespective of the study differences (Atack and Maher, 2010; Bigham et al., 2011; Chesters, Grieve and Hodgetts, 2016; Fairbanks et al., 2008; Fisher et al., 2015; O’Cathain et al., 2018; O’Hara et al., 2015).

In many of the studies included in this narrative review, participants were asked to identify patient safety issues and risks within interviews or focus groups. This particular method enabled participants to explore issues important and unique to them, which ultimately ensured a broad spectrum of different reported risks, given the different sample groups and countries included. However, while this methodological approach allowed for participants to raise any salient patient safety issue contextualised to their role and organisation, there were some commonalities across these qualitative and mixed-methods studies. For instance, in the exploratory qualitative study by Atack and Maher (2008), the authors interviewed 16 participants, and the individual patient safety concerns which emerged were then grouped into two overarching key issues: clinical judgement and training, and the focus of EMS and its relationship within the broader healthcare environment (Atack and Maher, 2010). The two critical areas of concern and their underlying patient safety issues can be found in the table below:

**Table 11: Key Patient Safety Issues in EMS**

Areas of Concern	Key Issues
<b>Clinical judgement and training</b>	Increase in complexity of patient situations
	Limits to protocol-based care
	Overcrowding in the ED
	Short training and evaluation cycle
	Insufficient opportunity for practice and supervision
<b>Focus of EMS and relationship to healthcare</b>	Lack of clarity on EMS focus: stabilise vs scoop and run
	Lack of alignment between public safety and healthcare
	Constellation of service delivery: service gaps

(Atack and Maher, 2010, p. 97)

Similar to Attack and Maher (2008), the broad areas of concern and key issues reported in the above table shared parallels with Fairbanks et al. (2008), another qualitative overseas study. The participants interviewed in Attack and Maher (2010) also discussed patient safety issues generated at the system-level, which require policy solutions implemented by their local region or government. The findings shown above in Table 11 may share additional commonalities to those in Fairbanks et al. (2008), as clinical judgement and training were expressed as the largest area of concern for patient safety in Attack and Maher (2010), while a majority (54 percent) of reported incidents were classified as a result of errors in clinical judgement within Fairbanks et al. (2008). However, as another qualitative study, participants in Fairbanks et al. (2008) were also allowed to discuss any perceived patient safety risk, which led to many which were not emphasised by those in Attack and Maher (2010). The authors identified that one of the most prevalent themes concerned adverse events and errors caused by other staff or agencies, and it was evident that the shortcomings of other EMS providers, hospital staff and public safety personnel were perceived as presenting a significant risk to patient safety (Fairbanks et al., 2008). In addition, participants commonly reflected on the lack of standardised training and equipment across the regions, as well as that paediatric patients presented a significant risk as they felt unequipped to handle this group of patients (Fairbanks et al., 2008). These issues concerning training and equipment are well supported in the literature, including in research by Attack and Maher (2010), Chesters, Grieve and Hodgetts (2016), Fisher et al. (2015), O'Hara et al. (2015) and O'Cathain et al. (2018). While the subject of paediatrics is not as prominent in this area of the literature, an unreadiness to treat some types of patients and conditions has been documented in the research by Attack and Maher (2010).

Similar to the qualitative work by Attack and Maher (2010) and Fairbanks et al. (2008), O'Hara et al. 2015, a study in the United Kingdom, adopted a multi-method qualitative methodology to explore systemic influences on the decision-making of paramedics to identify risks to patient safety during the transition of care. The authors collected data at three distinct Ambulance Service NHS Trusts in England, each of which represented a broad range of urban and rural settings, as well as service configurations, care pathways and staff roles, serving as a substantial strength through data source triangulation (O'Hara et al., 2015). O'Hara et al. (2015) found that training and the development of staff was a particular patient safety risk, while clinical judgement was not referenced as a standalone threat referenced by participants (Attack and Maher, 2010; Bigham et al., 2011; Chesters,



Grieve and Hodgetts, 2016; Fairbanks et al., 2008; Fisher et al., 2015). However, as the focus of O'Hara et al. (2015) was to explore the influences on the clinical decision-making of paramedics, it is reasonable to assume that this represented a significant patient safety risk, thereby resonating with the broader literature. These three qualitative studies sampled across Canada, the United States, as well as the United Kingdom, demonstrating that these issues exist across ambulance and emergency systems internationally.

Beyond the qualitative work by Attack and Maher (2010), Fairbanks et al. (2008) and O'Hara et al. (2015), the patient safety issues raised concerning clinical judgment and decision-making by paramedics is also quite prevalent in the mixed-methods and quantitative studies included in this narrative review. However, while participants in qualitative studies had the options to raise patient safety issues and risks freely, those utilising quantitative measures were restricted to ranking pre-determined risks as identified by other participants, or in the literature. For example, participants in Bigham et al. (2011) and Fisher et al. (2008) identified some of the factors that influence the clinical decision-making by paramedics, like the increase in demand, operational pressures, risk aversion and access to alternative care pathways. A separate set of participants within Bigham et al. (2011) and Fisher et al. (2015) then ranked the patient safety issues that were pre-selected by other participants, and their responses were therefore constrained to those options. Patient safety experts in Bigham et al. (2011), for example, were asked to rate several pre-selected patient safety issues and risks according to their perceived importance. Participants were also asked to assess the importance and feasibility of implementing each theme using a Likert scale ranging from one (not important / not feasible to implement) to five (very important / very feasible). A tabulated summary of their responses is included below:

**Table 12: Summit Ratings of Systematic Review and Interview Themes**

Theme	Importance (%)					Feasibility (%)				
	1	2	3	4	5	1	2	3	4	5
Clinical judgment and training	0	3	3	11	84	0	5	26	34	32
Medication adverse events	0	13	18	28	41	0	5	31	36	28
Intubation	0	13	26	26	36	0	11	18	39	29
Vehicle collisions	3	13	23	33	28	0	0	13	33	54
Relationship of EMS to the healthcare system	8	26	18	18	26	24	11	24	24	13

Interfacility transport	3	26	16	29	26	3	10	31	31	23
Aircraft safety	10	26	18	31	10	8	21	28	28	33

(Bigham et al., 2011)

As can be seen in the table above, clinical judgement and training were rated as the most important (rated 4 or 5) patient safety issues by 95 percent of participants, supporting the findings of Attack and Maher (2010) and Fairbanks et al. (2008), which were also conducted within North American EMS settings (Bigham et al., 2011). This finding also was supported by studies outside of North America, including by Chesters, Grieve and Hodgetts (2016), Fisher et al. (2015), O’Cathain et al. (2018) and O’Hara et al. (2015), thereby suggesting that these issues are incredibly prominent and recent within the United Kingdom. Participants in the summit frequently reported that the quality of training that paramedics receive might be poor, requiring a more robust approach to ensure that their clinical knowledge and skill set is adequate to appropriately judge and treat the complex conditions of patients (Bigham et al., 2011). This finding is extensively supported in the literature, including in studies by Attack and Maher (2010), Chesters, Grieve and Hodgetts (2016), Fairbanks et al. (2008), Fisher et al. (2015), O’Cathain et al. (2018) and O’Hara et al. (2015), where participants shared similar concerns with the level of training received by paramedics.

Similar to the findings by Attack and Maher (2010), another study that took place in Canada, Bigham et al. (2011), found that vehicle collisions were not perceived to be an important patient safety issue by participants. However, while the broader literature supported a majority of the findings in Bigham et al. (2011), participants (69 percent) in the summit rated adverse events related to medication as a highly important patient safety issue. This finding directly conflicts with Attack and Maher (2010) and Fisher et al. (2015), whose participants consisted predominantly of EMS clinicians and medical directors, respectively, and directly reported that medication errors were of minor significance when compared with other risks to patient safety. Therefore, this difference could be a result of their different methodological approaches, or because Attack and Maher (2010) and Fairbanks et al. (2008) included clinicians, while Bigham et al. (2011) included patient safety experts instead, representing a limitation of their study.

Similar to Bigham et al. (2011), seven medical directors in Fisher et al. (2015) also had the opportunity to rate ten patient safety risks that were pre-determined by other participants.

According to the seven medical directors sampled, the delayed access to hospital, handover to A&E and triage and call-handling were viewed as the most significant factors affecting patient safety in the NHS Ambulance Services. While no other similar research has explored the perceptions of medical directors in this area, the perceived importance of delayed hospital access and handover to A&E is supported by the broader literature, national figures, as well as is a frequent focus of the press. As highlighted by the NRLS data within the Introduction Chapter (Chapter 1), these issues would be on the minds of all medical directors as adverse events around access, admission and transfer represent the highest number of patient safety incidents reported in the English NHS Ambulance Services (NHS Improvement, 2018). Paramedics and ambulances are held up at A&E departments during these handover periods, and this area of concern has been investigated recently in the literature, including by Attack and Maher (2010), Fairbanks et al. (2008), O’Cathain et al. (2018) and O’Hara et al. (2015), whose findings support those in Fisher et al. (2015). However, as these medical directors were constrained to rating pre-selected risks, it is unknown whether they would have raised other issues, representing a limitation of this study, alike to Bigham et al. (2011).

While not ranked highly in Bigham et al. (2011), it should be noted that the significant patient safety issue concerning relationships with other care settings is also prevalent within the literature, as Attack and Maher (2010) and Fisher et al. (2015) demonstrated that the interrelationship of providers and staff was perceived as a significant risk to patient safety in the NHS Ambulance Services. In addition, the participants in Fisher et al. (2015) also reported that call handling and triaging, non-conveyance and available resources were perceived as large-scale issues affecting patient safety, while the diverse skill sets and knowledge of staff and medication errors were the least concerning, of which Attack and Maher (2010) supported the latter. Participants in Fairbanks et al. (2008) reported that a lack of standardisation was a patient safety issue of vital importance, directly conflicting with the findings by Fisher et al. (2015). However, Fairbanks et al. (2008) explored the perceptions of EMS providers, whose front-line roles and responsibilities differ widely with the medical directors included in Fisher et al. (2015). This difference in sample groups potentially explains the diverging perceptions of patient safety and justifies the need for research to explore these issues from a range of organisational levels. Beyond indicating that medication errors did not represent a significant patient safety issue or risk, no direct overlap appears to exist between the findings from the studies by Attack and Maher (2010)

and Fisher et al. (2015); however, this may be a result of the difference in methodological approaches, or because of the variable labelling of each patient safety issue. For example, 'Handover to A&E' as ranked highly by medical directors in Fisher et al. (2015), might be synonymous with 'Overcrowding in the ED' by Attack and Maher (2010); however, the lack of explanation of the concern in Fisher et al. (2015) restricts their comparison. Both studies were limited in the description of each issue, representing a significant weakness.

Similar to Attack and Maher (2010) and Fisher et al. (2015), O'Cathain et al. (2018), a recent study in the United Kingdom, also found that the operational pressures facing the NHS Ambulance Services were a patient safety risk, and labelled it 'Pressure at Emergency Departments'. However, unlike Attack and Maher (2010) and Fisher et al. (2015), O'Cathain et al. (2018) provided an in-depth explanation of what that factor encompassed, as their overall report was over 200 pages. The authors, therefore, had the opportunity to define each factor at length, representing a significant strength of the study. O'Cathain et al. (2018) included participants from a range of different organisational levels and found that the increased use of the NHS Ambulance Services led to delayed care, thereby representing a significant patient safety risk and issue. O'Cathain et al. (2018), similar to O'Hara et al. (2015), focussed on factors which impacted non-conveyance decision-making of patients to hospitals; however, these factors were deemed as significant patient safety issues and risks, directing contributing to this theme. O'Cathain et al. (2018) identified a broad range of factors which represented risks to patient safety, including triaging, skill-mix, training and the relationship with other healthcare providers, which resonated with the wider literature (Attack and Maher, 2010; Bigham et al., 2011; Chesters, Grieve and Hodgetts, 2016; Fairbanks et al., 2008; Fisher et al., 2015; O'Hara et al., 2015). While O'Cathain et al. (2018) identified a rather broad spectrum of risk factors, the authors did not conduct a ranking exercise, therefore, it is impossible to know whether each represents an equal patient safety risk, such as demonstrated by Bigham et al. (2011) and Fisher et al. (2015). However, it is important to note that as O'Cathain et al. (2018) identified such a broad array of factors through qualitative measures, a strength of their research, that their findings supported the other six studies concerning significant patient safety issues and risks.

As mentioned earlier, while seven studies contributed to the theme of 'Patient Safety Issues and Risks', there were two studies included in the review, which did not touch upon perceived risks to patient safety by participants. These two studies were Gallego et al. (2012) and Patterson et al. (2010), both which were conducted outside of the United

Kingdom and who utilised the Safety Attitudes Questionnaire (SAQ). This survey aims to collect a significant amount of data related to the perceptions of staff concerning safety. However, the methodology does not permit it to collect perceived patient safety issues and risks. Therefore, these two studies did not contribute to the overall theme and were therefore omitted from this section. The following paragraphs will summarise this section and will then highlight the subsequent gaps which need to be addressed by future research.

### **2.6.3.1 Summary and Gaps**

Patient safety issues and risks were a frequent theme in the literature, where seven out of the nine studies explicitly discussed patient safety risks and shared a level of agreement amongst the findings, regardless of the differences due to methodological approach, sample group or country. While a broad range of risks were identified by the studies, particularly those using a qualitative approach, a majority of the studies, all of which used either qualitative or mixed-method approaches, identified that clinical judgement, decision-making and a lack of training were the most critical issues impacting patient safety in the ambulance and emergency services within North America (Atack and Maher, 2010; Bigham et al., 2011; Fairbanks et al., 2008). This finding was also supported by research within the United Kingdom, as a lack of training was considered to be a substantial risk to patient safety in the quantitative study by Chesters, Grieve and Hodgetts (2016), a qualitative study by O'Hara et al. (2015) and a mixed-methods study by O'Cathain et al. (2018), whose participants reported that minimal training was available to staff. However, this finding conflicts with Fisher et al. (2015), where medical directors ranked delayed access to hospital, handover to A&E and triage and call-handling as the most pressing areas of concern for patient safety, while areas related to clinical judgement were ranked lower. In addition, while O'Hara et al. (2015) identified lack of staff training as a potential risk, it was unknown whether clinical decision-making, the key focus of the study, represented a greater risk to patient safety.

Medication errors and vehicle collisions were considered by a number of overseas and United Kingdom studies that included both front-line paramedics and management staff but regarded as a minor concern to patient safety (Atack and Maher, 2010; Fairbanks et al., 2008; Fisher et al., 2015). However, Bigham et al. (2011) only included EMS leaders and patient safety experts, and medication errors were perceived as a significant risk to patient

safety, conflicting with the broader literature who studied the perceptions of clinicians. As demonstrated above, there were some commonalities concerning the perceptions of patient safety risks and issues in the ambulance and emergency services. However, the available research also highlighted significant conflicting findings, requiring further investigation to explore uncertainties in the evidence base. In addition, it was clear that certain discrepancies stemmed from the methodological approaches, as some studies asked participants to share perceptions of significant patient safety issues and risks. In contrast, others asked participants to rank risks identified in the literature, or by other participants. Therefore, it is unknown whether certain patient safety risks were given the same emphasis across studies.

Among the findings concerning significant risks to patient safety, the United Kingdom literature was quite broad and variable. According to medical directors within the NHS Ambulance Services, the most substantial patient safety risks are delayed access to hospital, handover to A&E, and triage and call-handling (Fisher et al., 2015). The findings from O’Cathain et al. (2018) are supported by Fisher et al. (2015), in that triaging also represented a significant risk to patient safety. However, O’Hara et al. (2015) focussed more on training and development as a risk, which was not supported by Fisher et al. (2015) and was more aligned again with O’Cathain et al. (2018) and Chesters, Grieve and Hodgetts (2016), which also highlighted training as a significant patient safety issue, as mentioned earlier. However, Fisher et al. (2015) and O’Cathain et al. (2018) found that other healthcare providers represented a risk to patient safety, which was not supported by the other two studies in the United Kingdom. While these studies share many commonalities with the overseas literature, which will continue to be discussed below, comparisons between O’Hara et al. (2015), Chesters, Grieve and Hodgetts (2016), O’Cathain et al. (2018) and Fisher et al. (2015) remain challenging due to their varied methodological approaches, diverse sample groups and distinct foci.

Most of the included studies found that clinical judgement, clinical decision-making and lack of training for front-line staff were the most significant risks to patient safety, irrespective of country, service configuration, participants or the type of research they conducted (Atack 2010, Bigham 2011, Chesters 2016, Fairbanks 2008, O’Cathain 2018, O’Hara 2015). In contrast, Fisher (2015) found that senior managers regarded delayed access to hospital, A&E handover, triage and call-handling as the most significant risks. This difference may be attributable to the divergent perceptions of front-line staff compared to senior

management and emphasises the need to explore these differences further. However, this difference may be explained by the methodological approach and sample group used by Fisher et al. (2015), which included executive-level staff who ranked issues instead of raising new risks, such as would have been possible with semi-structured interviews or focus groups. A substantial gap exists in the literature of exploring the significant risks to patient safety utilising a qualitative methodology across several organisational tiers to identify whether the perceptions of patient safety risks remain similar or differ across each level of staff. As the United Kingdom literature has conflicting findings in this area, additional robust research utilising this approach is required to explore the perceptions of patient safety issues and risks in the NHS Ambulance Services.

Beyond patient safety issues and risks, another theme which emerged from the narrative review concerned reporting incidents and blame culture in the ambulance and emergency services. A synthesis of the literature, including the commonalities and differences contributing to the theme, will be discussed at length in the following section.

#### **2.6.4 Reporting Incidents and Blame Culture**

While many studies focussed on patient safety issues and risks, as evidenced in the above section, another prominent theme which emerged from the literature concerned the staff reporting of patient safety incidents and the existence of an extensive blame culture within the ambulance and emergency services. Out of the nine studies which were included in this narrative review, seven studies in total contributed to this theme, including Attack and Maher (2010), Bigham et al. (2011), Chesters, Grieve and Hodgetts (2016), Fairbanks et al. (2008), Fisher et al. (2015), O’Cathain et al. (2018) and O’Hara et al. (2015). With the exception of Chesters, Grieve and Hodgetts (2016), these seven studies predominantly utilised either qualitative or mixed-methods approaches, which facilitated the capturing of perceptions of reporting incidents in the ambulance and emergency services, as well as the existence of a culture of blame, through the data collection methods of interviews and focus groups. Two of the studies, which did not directly contribute to the overall theme, were Gallego et al. (2012) and Patterson et al. (2010), both who utilised the Safety Attitudes Questionnaire (SAQ) and did not directly focus on reporting or blame culture. As the SAQ asks respondents to answer questions concerning reporting incidents, this glaring absence within the studies represents a significant weakness. However, as the two studies investigated the

safety culture of the ambulance and emergency services, they will be discussed within this section as it relates to the overall narrative of this theme.

As the search strategy aimed to identify studies which explored the perceptions of patient safety in the ambulance and emergency services, it was expected to a certain degree that reporting incidents would be touched upon, as it relates directly to the safety of patients. However, in the first theme, while there were overarching commonalities, particularly clinical judgement and training, the significant patient safety issues and risks were arguably multiple and varied depending on the methodological approaches, sample groups and countries of each respective study. In contrast, in this theme, every study unilaterally found that the ambulance and emergency services had an evident blame culture and that participants were fearful of reporting incidents due to a fear of repercussion or punishment (Atack and Maher, 2010; Bigham et al., 2011; Chesters, Grieve and Hodgetts, 2016; Fairbanks et al., 2008; Fisher et al., 2015; O'Cathain et al., 2018; O'Hara et al., 2015). Surprisingly, it appears that despite the differences in methodological approaches, sample groups and countries where these studies were conducted, the perceptions of reporting patient safety incidents in this clinical setting proved to be quite poor, and no studies suggested that there was no blame culture, or that the perceptions of reporting incidents were positive.

While Patterson et al. (2008) did not provide the results of their findings concerning reporting incidents, the authors did suggest that no reporting mechanisms were in place at the time of the study, which prevented staff of the ambulance and emergency services from reporting any patient safety incidents. This finding was supported by Bigham et al. (2011) and Fairbanks et al. (2010), the latter of who developed an anonymous incident reporting system for their study. Of the 61 incidents that were reported by staff during this research, 33 involved an error in clinical judgement, skill performance issues caused thirteen, nine were related to medication errors, three were because of choice in a destination, and there were three classified as 'other' (Fairbanks et al., 2008). A total of 19 percent of the events recorded on the anonymous online platform went unreported in their organisation. At the same time, the rest were reported to a physician or supervisor, and none were disclosed to the patient involved (Fairbanks et al., 2008). Despite this data, the authors did not include a root-cause analysis of these reported incidents, and so their underlying causes were never explored with participants, thereby representing a limitation of this study.



Similar to Fairbanks et al. (2010), Chesters, Grieves and Hodgetts (2016) utilised a quantitative survey to ask participants in the Helicopter Emergency Medical Service (HEMS) to provide the most appropriate response to several patient safety incidents. The authors found that while protocols were in place, that participants exhibited a broad range of reporting attitudes and behaviours, suggesting that all incidents are not reported. Bigham et al. (2011) and Fairbanks et al. (2008) supported this finding that many patient safety incidents or errors go unreported; however, as older studies in North America, they did not have reporting infrastructure at the time and proposed implementing reporting mechanisms to increase the number of reported incidents in response to their findings. In contrast, Chesters, Grieve and Hodgetts (2016), a more recent study from the United Kingdom, determined that while protocols were in place, that staff are either unaware of the customs of incident reporting, or that reporting rates vary at the individual level as the most common reason given by participants for why errors or adverse events went unreported was that ‘it depends on the crew of the day’. In the questionnaire created by Chesters, Grieves and Hodgetts (2016), participants were provided with many different scenarios and were asked to select which action would be appropriate following its occurrence. The table below presents a summary of their responses:

**Table 13: Actions Required Following Events**

Event	Debrief with crew	Inform supervisor	Internal incident report	Report to CAA	Most common answer	Report to CAA suggested
Fuel cap left off	25	10	62	3	Internal incident report	No
Inadvertent IMC	39	22	31	8	<b>Debrief with crew</b>	<b>Yes</b>
FOD on start up	34	32	33	1	Debrief with crew	No
Forgotten core medical equipment	16	25	59	0	Internal incident report	No
Cowling latch left open	12	12	58	18	Internal incident report	No
Doors not secured	20	9	60	11	<b>Internal incident report</b>	<b>Yes</b>
Blade strike	0	6	19	75	Report to CAA	Yes
FOD strikes disc	0	6	38	56	Report to CAA	Yes

ICS failure	0	19	74	7	<b>Internal incident report</b>	<b>Yes</b>
Unexpected weather diversion	59	24	17	0	Debrief with crew	No
Take off with GPU connected	2	6	61	31	<b>Internal incident report</b>	<b>Yes</b>
Unplanned refuelling en route	20	28	47	5	<b>Internal incident report</b>	<b>Yes</b>
Diversion on clinical grounds	78	13	9	0	Debrief with crew	No
Person inside disc at take off	4	11	65	20	<b>Internal incident report</b>	<b>Yes</b>
Crew fatigue	16	58	25	1	Inform supervisor	No

(Chesters, Grieves and Hodgetts, 2016)

The answers in bold in the table above are those which are inconsistent with the guidelines provided by the Civil Aviation Authority (CAA) (Chesters, Grieve and Hodgetts, 2016). The information provided by Table 13 above is significant as it presents some of the only evidence in the literature demonstrating the high level of variability in reporting incidents and how the appropriate action following an event is perceived differently by members of staff. As approximately a third of responses were deemed incorrect by the CAA, it is important to stress that while protocols are in place within HEMS, that a high number of staff may not know what represents an incident which requires reporting to authorities. In total, 71 participants associated the reporting of incidents with punitive measures, and one participant wrote that a culture of no-blame was not present within their organisation (Chesters, Grieve and Hodgetts, 2016). This finding suggests that while protocols had been in place for reporting incidents, that staff were not likely to report an error due to an expectation or fear of being punished or blamed. As the HEMS was viewed as having a higher safety culture than the rest of the ambulance and emergency services, as supported by Chesters, Grieves and Hodgetts (2016) and Patterson et al. (2008), this finding suggests that the state of reporting is quite poor overall in this setting.

While the HEMS are markedly different from the general ground ambulance services, the findings by Chester, Grieves and Hodgetts (2016) are supported by the broader literature, which provides substantial evidence that rates of incident reporting by staff are low when compared to other care settings, and that a culture of blame is widespread (Atack and Maher, 2010; Bigham et al., 2011; Fairbanks et al., 2008). This culture of fear or blame has

been widely reported in similar research on an international level, including research by Attack and Maher (2010), Bigham et al. (2011), Chesters, Grieve and Hodgetts (2016) and Fairbanks et al. (2008). Within the qualitative study in Canada by Attack and Maher (2010), participants noted the existence of a blame culture within their respective organisations. They suggested that there was a need for a robust culture of reporting in the ambulance and emergency services and that reporting incidents should be required with staff supported through the process (Attack and Maher, 2010). Participants in Bigham et al. (2011) supported the findings by Attack and Maher (2010), and a majority of participants (66 percent) in Bigham et al. (2011) were confident that shifting the culture from one which is blame centred, to one that is open and blame-free, was highly feasible; a finding unreported elsewhere in the literature, both overseas and in the United Kingdom. However, participants in Bigham et al. (2011) consisted of patient safety experts, rather than clinicians, which may explain the optimism for the shift as higher-level staff have been found to have more positive perceptions of patient safety (Gallego et al., 2012).

As demonstrated in the quantitative study by Chesters, Grieves and Hodgetts (2016), the presence of a blame culture was not only identified within overseas studies and was extensively supported by those in the United Kingdom. Most notably, in their secondary analysis of data from NHS Staff Surveys, Fisher et al. (2015) found that approximately a quarter of respondents felt that they would be blamed or punished for reporting an incident and that only roughly 30% of respondents reported that the process of reporting was considered fair for staff. As the sample size in the NHS Staff Surveys analysed by Fisher et al. (2015) was substantial at 3823, this finding may be representative of the NHS Ambulance Services across England. However, the authors utilised the data from an NHS Staff Survey from 2011, representing a significant limitation of the study as that data could be viewed as out of date (Fisher et al., 2015). The United Kingdom studies by O’Cathain et al. (2018) and O’Hara et al. (2015) supported the findings by Fisher et al. (2015). Interviewees in O’Cathain et al. (2018) reported that there was an existing fear of blame in the NHS Ambulance Services and that organisational support would be necessary to support staff to make decisions they feel are correct in order to treat patients safely. Similar to O’Cathain et al. (2018), the qualitative study by O’Hara et al. (2015) found that paramedics felt that the organisation focussed on blaming staff for incidents rather than on organisational learning, which caused staff to be more risk-averse, thereby preventing any improvements by addressing emerging issues.

No studies in the United Kingdom suggested that a culture of blame did not exist, and it is telling that the setting with the most positive safety culture, or the HEMS, also had a prominent blame culture. The United Kingdom literature also demonstrated that operational staff were not the only group which perceived the existence of a blame culture. The studies, which included other levels of staff, including Fisher et al. (2015), O’Cathain et al. (2018) and O’Hara et al. (2015), also found that a culture of blame was evident in management and executive-level staff. While Chesters, Grieve and Hodgetts (2016) did not include management and executive-level participants, the authors did identify a culture of blame as reported by a wide range of roles, including paramedics, doctors and pilots within the helicopter emergency medical services (HEMS). Although each of the publications in the United Kingdom identified that staff across all organisational levels were fearful of reporting, none explored whether the blame culture had been the same as it was in the past, or if they expected it to improve going forward, or whether the findings were markedly different or similar across staffing groups. This finding may be supported by Attack and Maher (2010), which found that higher-level staff, such as an ED physician with expertise in patient safety, perceived the existence of a blame culture. However, it is essential to note that none of these studies explored the perceptions of reporting incidents and blame culture within distinct organisational levels, nor looked to identify if there was a shift in perceptions over time.

As mentioned earlier, while the two studies, Gallego et al. (2012) and Patterson et al. (2010) did not explicitly report any findings around reporting incidents, they did find that the safety culture within the ambulance and emergency services to be poor, where staff viewed patient safety more negatively. This finding indirectly supports the broader literature included in this narrative review, as reporting rates have been found to be lower where there is a more negative safety culture (Patterson et al., 2010). Dissimilar to the first theme of patient safety issues and risks, no individual studies within the narrative review produced conflicting findings which suggested that there wasn’t a culture of blame in the ambulance and emergency services, thus suggesting that this continues to represent an international and persistent patient safety issue both in the United Kingdom and overseas. These seven studies were conducted over a decade from 2008 to 2018, suggesting that this issue had not improved over this time, even as the more recent studies were conducted in organisations which may have more robust reporting infrastructure than those conducted around 2008.

The following paragraphs will provide a recap of this section and will then emphasise the existing gaps in the literature which need to be addressed.

#### **2.6.4.1 Summary and Gaps**

Similar to the literature found overseas, the research in the United Kingdom unanimously agreed that a blame culture was present in the NHS Ambulance Services, which negatively affected the rates of incident reporting by staff. However, while only three out of the five overseas studies explored perceptions concerning reporting incidents, all four studies in the United Kingdom investigated this area. Regardless of their varied methodological approaches and distinctive sample groups, all four studies in the United Kingdom identified that there was an evident blame culture in the NHS Ambulance Services, which prevents staff from reporting incidents (Chesters, Grieve and Hodgetts, 2016; Fisher et al., 2015; O’Cathain et al., 2018; O’Hara et al. 2015). The United Kingdom literature highlighted that operational staff were not the only organisational level which felt that there was a blame culture, as management and executive-level staff in Fisher et al. (2015), O’Cathain et al. (2018) and O’Hara et al. (2015) also perceived that there was a culture of blame. Although these studies included a range of different organisational levels of staff, none explored whether the perceptions of reporting incidents had changed over time, in particular, if blame culture had become worse, better, or had stayed the same.

When compared to other health professionals, such as physicians and nurses, the staff in the ambulance and emergency services perceive the state of patient safety more negatively, including a more prevalent culture of blame and punishment, which has led to an under-reporting of incidents. This finding is supported by Gallego et al. (2012) and Patterson et al. (2010), who both surveyed staff using the Safety Attitudes Questionnaire (SAQ). Using an amended version of the SAQ, Patterson et al. (2010) identified that while ambulance service staff exhibit negative patient safety perceptions, staff in the air EMS reported the highest safety culture scores, a finding that is supported by Chesters, Grieve and Hodgetts (2016). Gallego et al. (2012) also found an association between the organisational role of participants and patient safety attitudes, where management-level and more experienced staff reported more positive perceptions of patient safety compared to front-line staff. This finding was not corroborated by Chesters, Grieve and Hodgetts (2016), though the settings

differed between the two studies. Therefore, additional research is necessary to explore the differences in perceptions of patient safety by staff across an array of organisational levels in this care setting.

Inconsistent and under-reporting of patient safety-related incidents, such as adverse errors and near misses, were also a recurrent theme in the overseas and United Kingdom literature. There was a general consensus on the variability of reporting rates and the willingness of individuals to report errors in the context of varying degrees of negative organisational culture. Many events are unreported, and this may contribute to the lower overall incident rate compared to other care settings. According to Atack and Maher (2010), Bigham et al. (2011), Chesters, Grieve and Hodgetts (2016), Fairbanks et al. (2008), Fisher et al. (2015), O'Cathain et al. (2018) and O'Hara et al. (2015), this low rate of reporting is due to an existing blame culture in the ambulance and emergency services, where staff do not report incidents for fear of punishment or blame from colleagues or management. Chesters, Grieve and Hodgetts (2016), a study from the United Kingdom in the air ambulance services, who have the most positive perceptions of patient safety, also identified a blame culture, suggesting this issue is more serious in the NHS Ambulance Services. The overseas and United Kingdom literature was remarkably consistent in terms of the relationship between incident reporting rates and the perception of a blame culture, suggesting that this may be a widespread and persistent problem for ambulance and emergency services, irrespective of their configuration or context. This topic area requires more investigation to explore its underlying factors.

The following sections will discuss the strengths and limitations of this narrative review, as well as summarise the overall chapter and outline the study's aim, question and objectives.

## **2.7 Strengths and Limitations of the Review**

As previously discussed in the methodology section of this chapter, there are multiple strengths and limitations associated with an approach based on the principles of a narrative review. This type of review was ultimately selected as it was determined to be an appropriate method for critically appraising and providing a contextual synthesis of the literature around patient safety in the ambulance and emergency services, an area with minimal available evidence (Collins and Fauser, 2005). The principal strength of narrative

reviews is that they facilitate the collective interpretation of the existing qualitative and quantitative research through a flexible and non-systematic approach, thus enabling the exploration of areas which are newer and have less previous emphasis in the literature (Cronin, Ryan and Coughlan, 2008; Ferrari, 2015; Grant and Booth, 2009). However, this flexibility is also viewed as a limitation, as some argue that this approach lacks a level of transparency around its methods, as well as a set of standardised and ordered guidelines that inform its application (Dixon-Woods et al., 2005; Mays, Pope and Popay, 2005; Snilstveit, Oliver and Vojtkova, 2012). Another limitation was that while justification was provided for searching two databases, PubMed and Cumulative Index to Nursing and Allied Health Literature (CINAHL), it is possible that relevant studies were missed that were published in journals outside of their respective coverage. As discussed within the search strategy section, this was addressed by utilising the concepts of 'snowballing' and 'reverse snowballing' from systematic reviews to locate and identify relevant publications missed during the searching of the two databases, as well as through searching Google Scholar and regularly speaking with prominent academics in the area.

As demonstrated throughout this chapter, a structured approach to the narrative review was adopted to address the noted criticisms of narrative reviews by explicitly detailing and justifying the methods followed throughout the chapter. While the narrative review may still not be entirely reproducible, the thorough justification of the choices made provides a more vigorous examination of the patient safety literature while strengthening the positioning of this current study within the broader literature landscape (Mallett et al., 2012). The robustness of this review also was enhanced through the use of the Critical Appraisal Skills Programme (CASP), a critical appraisal tool, to guide the assessment of each included article, thereby ensuring that the studies are trustworthy, reliable and relevant to the subject area (Critical Appraisal Skills Programme, 2018). Insight into the interpretation of the CASP tools was provided at the beginning of this chapter. However, while useful for the stated reasons, it is essential to note that the CASP tools provide only a limited snapshot of a study's quality. Therefore, the additional appraisal covered in this review was required to capture the strengths and limitations of the methodological nuances missed by this critical appraisal tool. The sole inclusion of publications written in the English language may also be a limitation of this narrative review, as it is unknown whether studies with pertinent research questions were overlooked. However, as a PhD research project, no funding was

available that would have facilitated the accurate translation of potentially relevant literature written in other languages, and so this was not feasible.

## 2.8 CHAPTER SUMMARY

The overarching aim of this chapter was to provide the reader with a detailed and comprehensive synthesis of the available literature concerning the staff perceptions of patient safety in the ambulance and emergency services. A total of nine studies were identified and included within this narrative review, and as mentioned at the beginning of this chapter, none of the studies addressed the research question directly; therefore, the available data were gathered and positioned to develop a narrative and highlight the existing gaps. In particular, the review captured two prominent themes in the literature, including the staff perceptions of *patient safety issues and risks*, and *the reporting incidents and blame culture*. The arguments and constructs surrounding these two themes were then synthesised and presented within the overall narrative of the review. As the aim of the narrative review was to '*identify, synthesise and appraise the content, methodological arguments and assumptions found in the available evidence concerning the staff perceptions of patient safety in the ambulance and emergency services*', it was determined that this aim was met and the current gaps in the literature were highlighted. This narrative aided in the development of the interview schedule utilised for this study, and the following chapter outlines the methodological approach and methods adopted in this study. The conclusions of the literature review concerning the perceptions of patient safety in the ambulance and emergency services guided the construction of the following overarching research question and objectives found on the following page:



### **2.8.1 Research Aim**

To explore and characterise the staff perceptions, knowledge and understanding of patient safety across a range of organisational levels in the NHS Ambulance Services.

### **2.8.2 Research Question**

What are the staff perceptions of patient safety in the NHS Ambulance Services?

### **2.8.3 Research Objectives**

- 1.) To explore the meaning of 'patient safety' to staff within three Ambulance Service NHS Trusts in England, and how this differs between NHS Trusts and organisational levels.
- 2.) To investigate staff perceptions of risks to patient safety.
- 3.) To explore staff perceptions of reporting patient safety incidents within the NHS Ambulance Services.

## **Chapter 3 - METHODOLOGY AND METHODS**

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### **3.1 INTRODUCTION**

This chapter provides a description and justification of the selected research design and the methods of data collection and analysis. The first section begins with a detailed overview of the chosen theoretical approach and the rationale behind the selection of a qualitative methodology. The following section then provides a comprehensive account of the research methods, preceding the findings in the next chapter.

### **3.2 METHODOLOGY**

#### **3.2.1 Theoretical Approach**

Ontology, or the study of being, is centred on the nature of reality, and it is necessary for researchers to position themselves in regards to their ontological perspective of 'how it is' and 'how things work' (Ritchie et al., 2014; Scotland, 2012). Positivism and interpretivism are the two main ontological approaches to research, and they are fundamentally opposed in many ways. Positivism, sometimes called rationalistic or empiricism, is more closely associated with quantitative data, providing objectivity and validity to research through precise and measurable methods (Gay, Mills and Airasian, 2009; Henderson, 2011; Ritchie et al., 2014). The perspective of interpretivism, occasionally titled constructivism or naturalistic, is more subjective and tends to avoid the use of fixed frameworks while adopting more flexible methods of research (Carson et al., 2009; Henderson, 2011). This adaptive approach is more suitable for investigating the meanings behind the perspectives of participants to meet the aim of capturing, exploring and interpreting experiences and feelings around patient safety from people with a range of views (Black, 2006).

While positivism and interpretivism are considered the two distinct and traditional ontological approaches in research, it is essential to mention that some would argue that additional approaches exist (Henderson, 2011). For example, to address the limitations of the positivist ontological approach, post-positivism was developed by merging the interpretivist and positivist paradigms to consider the experiences and perceptions of individuals against the background of quantitative analysis (Clark, 2002; Kock, Gallivan and

DeLuca, 2008; Panhwar, Shah and Ansari, 2017). It has also been argued that critical theory, which incorporates the influences of politics and society, is the third ontological approach in science (Dieronitou, 2014; Ryan, 2018). However, given the ongoing debate found in the literature concerning the number of existing ontological positions, only the two traditional ontological approaches of interpretivism and positivism will be considered for the purposes of this study.

For this research project, an interpretivist ontological stance was adopted to explore the perceptions of patient safety of staff in the NHS Ambulance Services, as positivism was determined to be inappropriate for capturing the diversity and richness of human experience necessary to meet the study's aim. The interpretive approach is seen as idiographic, focussing on the individual involved instead of generalising the findings of individuals to the rest of the population, a nomothetic stance (Conner et al., 2009; Klein and Myers, 1999). Interpretivism also allows the researcher to understand the voices, meanings and events of a variety of individuals, and through studying a diverse set of staff from different levels and NHS Trusts in the services, this approach facilitates the comparison of participants from multiple perspectives (Chowdhury, 2014; Richardson, 2012). Staff in the NHS Ambulance Services may be unaware of the hidden ideological forces that influence their perceptions of patient safety, and the interpretive approach aims to provide insight into this area (Scotland, 2012).

While ontology concerns the nature of reality, epistemology is the study of how we know things about reality, and epistemological assumptions guide the creation, communication and procurement of knowledge about reality within research (Guba and Lincoln, 1994; Ritchie et al., 2014; Scotland, 2012). Social constructivism has been selected as the epistemological perspective for this research, as it stresses the importance of context and culture to understand and build knowledge around what happens in society (Kim, 2001). According to Creswell (2014), social constructivists aim to understand the world where they live by forming subjective meanings of their experiences. The meanings of these experiences are diverse and numerous, requiring researchers to examine their intricacy, instead of looking solely at minor categories or concepts (Creswell, 2014). As the research relies on the participants' perspectives of the phenomena, they are supported in developing their meaning of an experience or situation, and the aim of the research is then to interpret

these meanings and follow an inductive approach to establish a theory or pattern (Creswell, 2014).

The perspective of social constructivism is rooted in assumptions around reality, learning and knowledge, and it is necessary to understand these assumptions before applying this model to research (Kim, 2001). Social constructivists believe that reality is actively developed through experience, rather than by being passively collected, and from their perspective, reality is not for an individual to find, but instead must be constructed through their meanings of these experiences (Kukla, 2000; Ritchie et al., 2014). Social constructivists argue that learning, like reality, is not shaped by outside influences and takes place during social activities; and as a social process, there needs to be more than one individual involved for it to occur (Kiraly, 2014; McMahon, 1996). Social constructivists also suggest that knowledge is a product of human nature that is developed through historical, cultural, social and psychological factors, and the interrelatedness of these factors is seen as having a significant impact on how individuals view and understand the world (Creswell, 2014; Gredler, 2008; Prawat and Floden, 1994). Qualitative research contextualises the relationship of these factors through the use of methods that demonstrate an understanding of the perspectives and actions of participants on a holistic and systemic level (Creswell, 2014).

Ultimately, an exploratory approach was undertaken for this study, guided by the research aim and question, the theoretical perspective, as well as the lack of available evidence in the literature. Barker et al. (2002) suggest that research questions of an exploratory nature are appropriate for qualitative research when there is minimal understanding about a subject, when it is complicated, or when a majority of the previous studies produced contradictory and convoluted results. As demonstrated in the literature review, the guidelines by Barker et al. (2002) provide an accurate portrayal of the available literature around the perceptions of patient safety in the ambulance and emergency services. Therefore, a qualitative approach is appropriate for this study as it allows for the exploration of complex information around the values, motivations, opinions and perceptions that are the basis of, and can be conveyed through, behaviour and language (Berkwits and Inui, 1998; Lincoln and Guba, 1985). The section below outlines the adopted approach of generic qualitative inquiry and the justification of this methodology.

### 3.2.2 Generic Qualitative Inquiry

Generic qualitative inquiry, also referred to as interpretive or basic qualitative, was adopted for this research as it was determined to be the most suitable methodology for the exploration of perceptions of patient safety in the NHS Ambulance Services (Merriam, 2009). The expanding interest in qualitative health research has led to a corresponding growth in a wide range of qualitative methodologies that has been referred to as '*methodological acrobatics*', highlighting an increased level of difficulty in finding an appropriate approach (Neergaard et al., 2009; Sandelowski, 2000, p. 335). Creswell (2009) specified the traditional qualitative research methodologies as the following: phenomenology, ethnography, grounded theory, narrative and case study. These five approaches to research follow fixed methodological guidelines and are based on the worldview of the researcher, as well as their ontological and epistemological perspectives (Kennedy, 2016). Some researchers may feel pressure to adhere to one of these established methodologies when their research does not fit into one (Neergaard et al., 2009). However, when an ill-fitting methodology is imposed on research, it may not result in any theoretical or methodological contributions while disregarding any potential advantages of a generic qualitative approach (Neergaard et al., 2009; Sandelowski, 2000).

In generic qualitative research, no adherence to any of the traditional and established qualitative methodologies, such as phenomenology, grounded theory or ethnography is necessary (Goulding, 2005). Studies adopting a generic qualitative approach can be designed to combine suitable aspects of these conventional methodologies, thereby developing a new approach, or they can ignore this and follow no methodological framework (Caelli, Ray and Mill, 2003). Although Caelli et al. (2003) suggest that generic qualitative studies do not subscribe to any specific methodological perspective, other proponents of the generic approach propose that research must build on the concepts and customs that preceded it (Crotty, 1998; Kahlke, 2014). Different methodological approaches were initially considered for this research, including those of grounded theory, phenomenology, ethnography, narrative inquiry and case studies. However, these approaches were judged as unsuitable to the research aim and questions, and the justification for their ultimate rejection is outlined in the paragraphs below.

Case studies were examined for this research project as they facilitate the incorporation of a diverse set of methods to explore or investigate an individual, group or event in an area of research where the existing theory is inadequate (Gerring, 2004). This methodology is seen as appropriate as the basis for modestly scaled work which answers 'what', 'how' and 'why' questions, which aid in the development of structured and measurable tools of data collection (Crowe et al., 2011; Rowley, 2002). However, as indicated by the name, case studies investigate an individual 'case' or subject of the research that has distinctive traits (Percy, Kostere and Kostere, 2015). Despite the strengths presented by the case study methodology, it was determined that it would be too challenging to define a 'case' in this study that is exploratory with many areas of interest (Harrison et al., 2017). This study was also not aiming to understand causal links between events in the NHS Ambulance Services, or use a variety of data collection methods, which are particular features of the case study design (Crowe et al., 2011). The use of grounded theory (GT) was also briefly explored as this approach safeguards the processes of data collection and analysis from outside ideas and influences (Glaser and Strauss, 1967). The grounded theory methodology is also conducive to investigating phenomena with little previous attention in the literature, which is directly applicable to research in the ambulance and emergency services (Salkind, 2010). However, while an established and validated methodology, there is significant debate around the correct approach to grounded theory, resulting in multiple existing versions which provide further confusion for researchers (Denzin and Lincoln, 2008). Additionally, GT was not selected as the use of theoretical sampling was considered to be ill-suited to the participant group, as well as because this research did not aim to produce or develop a theory.

Ethnography was also examined given its suitability for exploring complex social phenomenon, as well as because similar research in the ambulance and emergency services have utilised this methodological approach with success, such as O'Hara et al. (2015), who incorporated a variety of qualitative methods of data collection (Reeves, Kuper and Hodges, 2008). However, an ethnographic approach was not selected as the logistics of interacting and observing NHS Ambulance Service staff in their work environment was determined to be infeasible. Additionally, ethnography was not chosen because this research project did not aim to solely explore cultural elements of patient safety, which is an ethnographic focus (Goulding, 2005). A phenomenological approach was also considered as it provides an in-depth investigation of the 'lived experience' of values,

opinions, beliefs and attitudes (Gallagher, 2012; Percy, Kostere and Kostere, 2015). However, phenomenological researchers tend to neglect the external forces guiding cognitive processes and instead focus on the subjective nature of experiencing from an internal perspective (Percy, Kostere and Kostere, 2015). This research is interested in investigating the actual content of participant responses, rather than the subjective psychological, cognitive processes of experiencing, and so phenomenology was not selected for this study. Lastly, an approach based on the principles of narrative inquiry was explored as it aims to capture what individuals value and how they think through events (Riley and Hawe, 2004). However, the narrative inquiry methodology was ultimately not selected as it was determined that conducting several interviews with each participant to both elicit and examine their stories concerning a significant event in their lives was not in line with the aim of this study (Clandinin, 2006; Jovchelovitch and Bauer, 2000; Lindsay and Schwind, 2016).

Table 14 below presents a summarised description of the various qualitative methodological approaches considered and the justification behind the choices made, including the final selection of generic qualitative inquiry.

**Table 14: Justification for the Selection of the Generic Qualitative Approach**

Type	Brief Description	Choice	Justification
Phenomenology	Provides an in-depth investigation of the 'lived experience' of values, opinions, beliefs and attitudes (Gallagher, 2012; Percy, Kostere and Kostere, 2015).	No	Did not aim to study the 'lived experience' of participants, and was more focussed on external factors, rather than the internal cognitive processes.
Grounded Theory	A systematic research process that results in the generation of a theory (Glaser and Strauss, 1967).	No	Did not aim to develop a theory.
Ethnography	Methodology where the researcher observes and interacts with participants in a real-life environment, often looking at cultural aspects (Goulding, 2005).	No	Logistics behind observing and interacting with participants in this setting were determined to be too challenging to operationalise. The research was also not solely looking at culture.
Case Study	Utilises a diverse set of methods to investigate an individual, group or event in an area of research where the existing theory is inadequate (Crowe et al., 2011; Gerring, 2004).	No	Did not aim to conduct an in-depth study of an individual case, nor explore causal links with several methods of data collection.
Narrative Inquiry	A research methodology for studying	No	Did not aim to capture a narrative of the

	the lived experience through personal stories (Clandinin, 2006).		stories of significant experiences or events by participants.
Generic Qualitative Inquiry	Methodological approach that aims to explore and understand the perceptions of people involved in a phenomenon (Merriam, 2002). This approach does not adhere to any established or conventional methodology (Goulding, 2005).	Yes	Aim to explore and characterise the perceptions, knowledge and understanding of patient safety by staff in the NHS Ambulance Services.

As demonstrated above, a generic qualitative approach was selected for this study over other established and validated qualitative methodologies. This selection was a result of the unsuitable nature of alternative approaches, as well as the appropriateness of its theoretical perspective and methods of data collection and analysis. According to Merriam (2002), generic qualitative studies are theoretically interpretative and epistemologically social constructivist, which are the theoretical and philosophical positions underpinning this research. Similar to all qualitative research, studies using generic qualitative inquiry aim to understand how individuals interpret and construct meaning from their experiences and the world (Merriam, 2002). Generic qualitative studies also enable the in-depth investigation of individuals' subjective values, beliefs, perceptions and their reflections on experiences, and this approach is particularly suitable when the researcher has a foundational knowledge and understanding of a subject area while seeking to learn more from the perspective of the participants (Merriam, 2002; Percy, Kostere and Kostere, 2015).

Individuals adopting a generic qualitative approach have been described by Caelli et al. (2003) from the work of Merriam (2002, p. 11) as those who '*seek to discover and understand a phenomenon, a process, or the perspectives and worldviews of the people involved*'. The generic qualitative approach aims to collect data generated from individuals' responses concerning their thoughts about things external to them, with a particular focus on issues and experiences (Percy, Kostere and Kostere, 2015). As the emphasis is placed on external 'real-world' events, this approach generally relies on semi-structured or fully-structured methods of data collection, rather than unstructured methods which are more common in a phenomenological approach (Bryman, 1984; Percy, Kostere and Kostere, 2015).

The methods most commonly utilised in generic qualitative inquiry are semi-structured interviews, questionnaires and written or oral surveys (Barriball and While, 1994; Percy,



Kostere and Kostere, 2015). Ultimately, semi-structured interviews were adopted as the standalone method of data collection for this study, as they are appropriate for exploring complex perceptions while allowing the probing of additional information (Barriball and While, 1994; Percy, Kostere and Kostere, 2015). Generic inquiries aim to provide a comprehensive account of the researched phenomenon through mostly inductive methods that utilise open coding, categories and thematic analysis (Cooper and Endacott, 2007; Lim, 2011; Percy, Kostere and Kostere, 2015). Therefore, qualitative data that are collected in generic qualitative studies are typically analysed using thematic analysis with constant comparison, thereby facilitating a more in-depth understanding (Cooper and Endacott, 2007; Lim, 2011; Percy, Kostere and Kostere, 2015). For this research, the Framework Method of thematic analysis was selected, and the constant comparative technique was adopted, both which aided in comparing data across and within cases in the matrices to aid in the continual refinement of each theme (Fram, 2013; Gale et al., 2013; Glaser and Strauss, 2000).

Although growing in utilisation, some criticisms exist concerning the perceived limitations of the generic qualitative approach in ensuring a high standard of rigour and quality (Cooper and Endacott, 2007; Kahlke, 2014). A common theme of these concerns stems from the potential challenges faced when working without an established and trusted methodology, as critics argue that due to a lack of methodological guidance in the literature, there exists a possibility of inconsistencies arising in the research design between components in the research framework (Cooper and Endacott, 2007; Kahlke, 2014). For example, critics could argue that without a validated methodology, a naive researcher might adopt an epistemologically positivist stance and a qualitative method of data collection, representing two opposing concepts. Negligence of the epistemological and theoretical perspective or worldview of the researcher can also produce incongruities in the various research elements, leading to unrecognised bias within the study that has the potential to influence the results (Crotty, 1998; Kahlke, 2014). An absence of understanding of the philosophical and theoretical underpinnings of research may, therefore, reduce the level of quality and rigour by producing contradictions in the results (Crotty, 1998; Neergaard et al., 2009; Patton, 1999).

Critics of generic qualitative inquiry have also referenced an argument by Morse (1989), citing that the 'mixing' or 'combining' of methodologies and methods will produce a reduced

standard of research (Caelli, Ray and Mill, 2003; Johnson, Long and White, 2001). However, instead of forcefully joining two or more methodologies, potentially leading to issues of incompatibility as Morse (1989) suggested, a generic qualitative approach enables researchers to build an entirely new framework comprised of a bespoke epistemology, theoretical viewpoint, methodology and methods (Kahlke, 2014). Instead of attempting to strike a harmony between existing methodologies, the new research framework enables the researcher to choose the approach that is best suited to answer their research question (Kahlke, 2014). Despite these valid concerns of generic qualitative inquiry, there are additional advantages to adopting this approach, including the advancement of theoretical perspectives and the development of new research strategies and approaches. In areas of research with minimal previous attention, such as the ambulance and emergency services, there is an unlimited potential for novel approaches and theoretical perspectives (Ritchie et al., 2014).

Although it is argued that a generic qualitative approach is less based on theory than other methodologies, an integrated connection is robustly evident between the research aim and question, as well as the methodological selections, justifications and the research methods (Merriam, 2009; Sandelowski, 1993). The limited available literature guiding the generic approach requires that researchers search for, consider and source a diverse range of information to shape their methods of research. This extensive process of 'thinking through' can be invaluable as it has been argued by Chamberlain (2000) that an over-dependence on methodological assumptions and guidelines can diminish a researcher's ability to consider the available choices at every level. Advocates of generic qualitative inquiry have also maintained that the research questions should direct and inform the selection of the methodology and methods, instead of the methodological approach shaping the research questions (Caelli, Ray and Mill, 2003; Johnson, Long and White, 2001; Kahlke, 2014; Thorne, Kirkham and O'Flynn-Magee, 2004). Therefore, the research aim and question in this study informed the methodological approach and methods selected, and not the other way around.

### **3.3 METHODS**

#### **3.3.1 Research Design**

As discussed in the section above, generic qualitative inquiry was determined to be the most suitable methodological approach for meeting the aim of this research project. Generic qualitative inquiry draws upon fixed methodologies to construct a research design, utilising corresponding methods of data collection and analysis that can produce a comprehensive account of the perceptions of patient safety in the NHS Ambulance Services. As the aim of this study is to explore and characterise the perceptions, knowledge and understanding of patient safety, the data collection method of semi-structured interviews was adopted to capture the staff perceptions from a range of organisational levels in three Ambulance Service NHS Trusts in England.

#### **3.3.2 Participants**

Participants sought for this research were staff in the NHS Ambulance Services in roles relating to patient safety, all of whom represented a diverse range of skills, knowledge, and academic and clinical backgrounds. Many management and executive-level staff members in the NHS Ambulance Services have previously started at the operational level, working their way up while they gained experience gradually in a variety of roles. This standard career progression and trajectory would lead to a level of knowledge and perspective from many organisational levels, not solely of their own. However, operational-level staff have typically never worked in a management role or higher, and their viewpoint is therefore primarily constrained to their operational role.

#### **3.3.3 Inclusion and Exclusion Criteria**

The inclusion and exclusion criteria detail the specific characteristics used to identify suitable participants for research, thus providing guidance when selecting who can be included and excluded from the sample in an approach that is consistent, objective and reliable (Garg, 2016; Salkind, 2010). Defined inclusion and exclusion criteria can be necessary to ensure that the sample of study participants reflect the attributes of the target population, and they should be developed in line with the research aim (Luborsky and Rubinstein, 1995; Robinson, 2014; Salkind, 2010). Therefore, a tabulated version of the

inclusion and exclusion criteria followed during the recruitment stage of this research can be found below:

**Table 15: Recruitment Inclusion and Exclusion Criteria**

<b>Inclusion Criteria</b>	<p>Individuals were sought for the study if they were:</p> <ul style="list-style-type: none"> <li>- aged 18 years or older</li> <li>- currently employed by one of the three selected Ambulance Service NHS Trusts in England</li> <li>- in a role relating to the experience and reporting of patient safety, or of governance and policies relating to patient safety</li> </ul>
<b>Exclusion Criteria</b>	<p>Individuals were excluded from the study if they were:</p> <ul style="list-style-type: none"> <li>- not employed by one of the three selected Ambulance Service NHS Trusts in England at the time of the recruitment and data collection</li> <li>- not exposed or connected to aspects of patient safety within their role</li> <li>- under investigation for a patient safety incident within their organisation</li> </ul>

As this study aimed to explore the perceptions of patient safety in the NHS Ambulance Services, it was necessary to only include members of staff whose role was at least tangentially related to aspects of patient safety. This criterion was set to avoid recruiting staff who may not work in an area directly connected to patient safety, such as in some roles related to finance or janitorial services, for example. Participants under investigation for a patient safety incident at the time of the study were also excluded, as there was a concern that staff under investigation may harbour a biased view of patient safety and the NHS Ambulance Services that would influence their responses.

### 3.3.4 Sampling and Recruitment

The process of sampling is a foundational component in the design of qualitative research and has often been given less attention in the literature than it deserves (Coyne, 1997; Ritchie et al., 2014; Robinson, 2014). According to Robinson (2014), a high-quality sampling framework is necessary to address four barriers to sampling in interview-based studies, including establishing the sample universe, selecting a sample size, choosing a sampling strategy and recruitment. In the following section, the sampling and recruitment of staff in the NHS Ambulance Services for this study will be discussed in alignment with those four points raised by Robinson (2014). Following the guidelines as specified by Robinson (2014) proved to be invaluable, as it resulted in a sample that was logical, attainable, and that fit the aim of the study.

### 3.3.4.1 The Sampling Frame

With some exceptions, the majority of published research in this area typically include participants restricted to one single role and do not canvas the staff perceptions from multiple organisational levels. For example, studies tend to incorporate the views of paramedics, or medical directors, without exploring the perceptions of staff in other less notable or pronounced roles. An array of staff roles influence patient safety within the NHS Ambulance Services, and so it was considered vital to conduct research utilising the perspectives of a variety of roles and levels with that influence. Sourcing the experiences from a range of professional roles also has the potential to increase the reliability, or consistency, of the results through data source triangulation (Carter et al., 2014; Flick, 1992). Therefore, participants were sought from three organisational levels if they were in a position that was related to the experience and reporting of patient safety, or involved in any form of patient safety governance and policies (Carter et al., 2014; Flick, 1992). Research by Gallego et al. (2012) has demonstrated a relationship between patient safety attitudes and organisational roles, while Wankhade (2012) has identified three distinct corporate cultures in the NHS Ambulance Services, including an executive-level, management-level, and micro-level. Given the full range of staff roles and responsibilities in the NHS Ambulance Services, a table was developed (see below) to provide the classification and categorisation of these positions, stratifying each into three distinct organisational levels representing operational, management and executive-level staff. As each Ambulance Service NHS Trust is structured differently, it is crucial first to give a brief overview of their staffing composition.

As first discussed in the Introduction Chapter (Chapter 1), each of the three Ambulance Service NHS Trusts in England has different organisational structures, complicating a uniform classification. For example, some operational, management and executive-level positions may be present in one NHS Trust and not in another. Therefore, any previously undefined positional roles that appeared were allocated to organisational levels on an ongoing basis when recruiting participants from each NHS Trust. The tentative list of staff roles from each NHS Trust sought for interviews in this study is detailed below:

- NHS Trust Board Chair
- Chief Executive
- Director of Performance of Patient Experience

- Director of Service Delivery
- Director of Healthcare Governance or Deputy
- Director of Organisational Development
- Director of Workforce Development
- Medical Director or Deputy
- Clinical Director or Deputy
- Director of Health Informatics or Deputy
- Head of Education, Training and Development or Head of Clinical Education
- Head of Clinical Safety or Head of Risk and Safety or Risk Manager
- Head of Clinical Governance
- Consultant Paramedic
- Advanced Paramedic
- Senior Paramedic
- Paramedic
- Dispatcher
- Ambulance Technician

As mentioned previously, positional titles varied within Ambulance Service NHS Trusts, and this list, therefore, remains incomplete. The list of staff above includes approximately nineteen different roles, and it was recognised that participants with alternative titles needed to be recruited as well. Staffing roles were then categorised by hierarchical organisational tiers so that the perceptions of patient safety could be captured and compared across a range of organisational levels. The table below is an example of the defined categorisation of NHS Ambulance Service staff used in this research, as it demonstrates the flexible process of allocating participants according to their position within the overall organisational structure.

**Table 16: Organisational Categorisation of Staff**

Executive-Level Staff	Management-Level Staff	Operational-Level Staff
<ul style="list-style-type: none"> <li>- Chief Executive</li> <li>- Deputy/Assistant Chief Executive</li> <li>- Director of Performance of Patient Experience</li> <li>- Director of Service Delivery</li> <li>- Director of Finance</li> <li>- Director of Organisational Development</li> <li>- Director of Workforce Development</li> <li>- Head of Education, Training and Development</li> <li>- Medical Director</li> <li>- Assistant Director of Healthcare Governance</li> </ul>	<ul style="list-style-type: none"> <li>- Head of Clinical Safety</li> <li>- Assistant Clinical Director</li> <li>- Consultant Paramedic</li> <li>- Advanced/Specialist Paramedics</li> <li>- Head of Risk and Safety</li> <li>- Risk Manager</li> <li>- Head of Clinical Governance</li> <li>- Head of Clinical Education</li> </ul>	<ul style="list-style-type: none"> <li>- Emergency Operations Centre (EOC) Staff</li> <li>- Paramedic (Consultant, Senior, Advanced)</li> </ul>

Categorising participants as executive, management or operational staff was expected to be typically straightforward. However, there was occasionally some uncertainty when it came to assigning unique staff roles to a designated organisational level. Where this ambiguity arose, a colleague partly employed by the NHS Ambulance Services was contacted to clarify the position and the responsibilities of the potential participants to aid in the allocation process. It should be mentioned that as the divide between the levels of staff was subjective and not absolute, that some minor inconsistencies existed between participant levels in each NHS Trust. The following section will summarise the process of determining the sample size.

#### **3.3.4.2 Selecting a Sample Size**

When selecting a sample size for qualitative research, the number of participants included should be adequately diverse and large enough to meet the study aims (Dworkin, 2012; Patton, 2015). Although qualitative sample sizes are generally smaller than quantitative ones, it is fundamental to a study's quality to determine and select an appropriate sample size, as an insufficient number of participants can weaken the results of the research (Sandelowski, 1995). Despite the need for an adequately sized sample, qualitative research can be a challenging and laborious process, requiring a substantial amount of time to collect and analyse the data, which places limitations on the overall size of the sample (Mason, 2015).

Unlike quantitative research, minimal guidance exists concerning the selection of a sample size for qualitative studies, and many researchers tend to avoid proposing specific numbers (Mason, 2010). Some research suggests that qualitative sampling is an ongoing process until saturation has been attained, providing that a sufficient richness of the data has been met (Bowen, 2008; Glaser and Strauss, 2000; Malterud, Siersma and Guassora, 2016). However, there is some variability in the use and conceptualisation of saturation, and some researchers instead choose to determine sample sizes through a combination of practical and theoretical considerations (Robinson, 2014; Saunders et al., 2017). Although an approach based on data saturation has some arguable strengths, it can also be seen as impractical as it does not indicate a sample size before data collection begins (Boddy, 2016; Guest, Bunce and Johnson, 2006). It is difficult to estimate the time and effort required for data collection, which can cause issues in a PhD research project with funding and time constraints. As mentioned earlier, it was also considered essential to represent three

organisational levels of the NHS Ambulance Services, as well as three NHS Trusts to capture both depth and breadth. Therefore, a sampling approach utilising saturation would have been inappropriate as it may have posed issues with interviewing staff in all three Ambulance Service NHS Trusts and across the three organisational levels. For example, each organisational level, as demonstrated in Figure 3, Figure 4 and Figure 5, consisted of a wide array of roles, and there was some uncertainty concerning when or if saturation would be reached, thereby raising difficulties with the time-scale of the PhD. For the reasons described, a structured approach was required, rather than one based upon saturation.

The sample size for this study was determined by several practical and theoretical considerations (Saunders et al., 2017). Three individual English Ambulance Service NHS Trusts were selected as sites for this study, as a recent scoping review of the literature reported that previous research was predominately limited to one location, restricting the generalisability of their findings (Fisher et al., 2015). Out of the ten Ambulance Service NHS Trusts in England, the three that were ultimately chosen represented a diverse range of geographic regions, patient populations and reported patient safety incidents in regards to the number, level of severity and type. When selecting the three NHS Trusts, attention was also given to the results from the National NHS Staff Surveys, as it was deemed pertinent to include organisations that had reported results that were dissimilar in areas such as errors and incidents, health and wellbeing, effective team working, managers, and patient care and experience. Practical considerations were also taken into account when selecting sites, as it was expected that a considerable amount of time would be spent travelling to collect data at each. Therefore, three Ambulance Service NHS Trusts were ultimately determined to be the highest number that would be feasible, given the three-year time constraint of the PhD contract (Johnson et al., 2017).

As a PhD research project, certain time and funding constraints were unavoidable, thereby limiting the number of interviews that would be achievable. The sample size was also influenced by the inclusion of three distinct categorisations of organisational levels, which increased the heterogeneity of the participants (Robinson, 2014). It was important that the sample was large enough to capture the perceptions of participants from all three organisational levels and Ambulance Service NHS Trusts, while small enough to remain attainable (Mason, 2010). In the end, a sample of up to 45 participants was determined to be the most appropriate size to meet the aim of this study. It was decided that approximately



15 semi-structured interviews would be conducted with participants from each of the three Ambulance Service NHS Trusts, with three to eight participants representing each designated organisational level: operational, management and executive. To further illustrate the sample, the table below provides an example of the number of participants in the sampling frame, organised by Ambulance Service NHS Trust and organisational level:

**Table 17: Sampling Frame by NHS Trust and Organisational Level**

	Operational-Level	Management-Level	Executive-Level
<b>NHS Trust - T1</b>	3 to 8	3 to 8	3 to 8
<b>NHS Trust - T2</b>	3 to 8	3 to 8	3 to 8
<b>NHS Trust - T3</b>	3 to 8	3 to 8	3 to 8

### 3.3.4.3 Choosing a Sampling Strategy

Following the development of the sampling frame and size, it was then necessary to choose a sampling strategy for recruiting participants. As a small-scale qualitative study which is not intended to be representative of all staff in the NHS Ambulance Services, an approach based upon non-probability sampling was required (Etikan, Abubakar Musa and Sunusi Alkassim, 2016; Uprichard, 2013). Ultimately, two sampling techniques, or methods, of non-probability sampling were chosen, including purposive and snowball sampling (Etikan, Abubakar Musa and Sunusi Alkassim, 2016). Purposive sampling was ultimately selected as it allowed for the recruitment of the most relevant, knowledgeable and experienced individuals around aspects of patient safety within the NHS Ambulance Services (Creswell and Clark, 2011; Patton, 2015). A sampling framework was developed and used to select three to eight staff members from each of the three distinct organisational levels to represent a range of views of staff across the three Ambulance Service NHS Trusts. Despite the selection and utilisation of purposive sampling for this research project during the recruitment stage, an additional sampling strategy was also necessary to ensure that the recruitment targets were achieved. Therefore, this study also utilised snowball sampling to recruit participants when the processes, which facilitated purposive sampling, were not readily available.

In a small number of cases, some participants identified other individuals within their NHS Trust that were suitable to take part in an interview. This type of sampling is known as snowball, or chain sampling, and if the suggested participants were determined to fit the inclusion criteria of the study, they were then invited to take part (Biernacki and Waldorf, 1981; Palinkas et al., 2013). Other sampling methods were also considered when designing this study, such as convenience sampling and theoretical sampling, for example. Convenience sampling was not suitable for this study, as this research had a multi-site design in three Ambulance Service NHS Trusts, where the researcher was not in close geographical proximity to the participants (Etikan, Abubakar Musa and Sunusi Alkassim, 2016). Theoretical sampling was a compelling approach; however, it was not selected for this research project due to its perceived complexity and the disinterest in generating a theory (Draucker et al., 2007).

#### **3.3.4.4 Recruitment Methods**

Recruiting participants for qualitative research can be one of the most difficult and resource exhaustive components of a study (Archibald and Munce, 2015). The availability and commitment of healthcare professionals in research can vary, potentially causing poor recruitment rates and prolonging the length of the data collection period (Riis et al., 2016). Before the recruitment stage, an outstanding concern was that staff in the NHS Ambulance Services would be relatively unreachable. Operational staff often work in isolated environments away from colleagues and their station, limiting options to recruit. Executive-level staff typically rely on a personal assistant and have minimal availability in their schedules, while management-level staff were anticipated to be the easiest to recruit. In addition, it was expected that the numbers recruited in each staff group would vary per NHS Trust and depend on the interest and availability of each participant (Bernard, 2017). Despite the challenges, research in the NHS Ambulance Services is a growing field, and many studies conducted in this setting have demonstrated that staff can be accessible and willing to participate in face-to-face and telephone interviews (Fisher et al., 2015; O’Cathain et al., 2018; O’Hara et al., 2015; Wankhade, 2009).

The recruitment of participants for this study required an adaptive approach in each Ambulance Service NHS Trust and within each organisational level: operational, management and executive. When exploring recruitment methods for ethical approval, the

primary research and development (R&D) contact for this study suggested the use a recruitment flyer that would be distributed over the medium of routine information bulletins (RIBs) in each NHS Trust, a copy of which can be found in Appendix D. The R&D lead also recommended that the study should be advertised via organisational social media platforms that each NHS Trust use for disseminating information to employees, including Yammer and Facebook. This particular method of recruitment required a small text description of the research posted by the gatekeeper within these platforms, as well as in RIBs, and can be found in Appendix E. In case these methods proved ineffective, an additional supplemental method was included where a gatekeeper was identified within each NHS Trust, who would then determine and facilitate the recruitment of participants on behalf of the researcher. These three recruitment methods gained ethical approval from the Faculty of Health & Social Care Research Ethics Committee (FREC) at Edge Hill University, as well as the Health Research Authority (HRA), and they were used in conjunction with each other in every NHS Trust.

#### **3.3.4.5 Informed Consent**

In health research, informed consent must be adequately conveyed to all participants involved, as well as their ability and right to withdraw from the study at any time, without the need for a reason (Houghton et al., 2010; Jegede, 2009). During the recruitment stage of this research project, participants were sent an electronic copy of the consent form and a participant information sheet via email, which informed them that they had seven days to decide whether they would like to take part in the research or not. These documents detailed their rights as participants as well as what could be expected during their involvement (Appendix H and I). These rights were also repeated to participants either in person or over the phone before beginning each interview. Participants were informed that they could withdraw at any point up to seven days after the date of their interview, without needing to give a reason. It was also reiterated that after seven days, they would no longer be able to withdraw from the study, as the data analysis would begin at this point following the anonymisation of their transcript. Before starting each face-to-face interview, participants were handed a consent form and asked to sign following a short period where they could read through and have any concerns and questions answered. When interviews were conducted over the phone, participants were asked to read through the electronic version

of the consent form, and they were given time to ask any questions, before providing their audio-recorded verbal consent.

### **3.3.5 Research Quality**

Critics of qualitative research often cite its perceived lack of rigour, inadequate justification of the adopted methods of data collection and analysis, as well as an absence of transparency in the analytical process and findings (Noble and Smith, 2015; Rolfe, 2006). These criticisms can be challenging to defend against, as there is no universal and standardised approach to assessing the level of validity in qualitative studies (Rolfe, 2006). However, while existing statistical measures of validity and reliability in quantitative research cannot be used to evaluate qualitative studies, when applied in their broadest context, reliability and validity are arguably suitable and necessary concepts for achieving a high level of rigour in the qualitative research paradigm (Long and Johnson, 2000; Morse et al., 2002; Noble and Smith, 2015). The use of validity and reliability was primarily substituted with trustworthiness, which was developed by Lincoln and Guba (1985) as a measure of quality in qualitative research in the 1980s. Instead of validity and reliability, trustworthiness includes the following criteria: credibility, transferability, confirmability and dependability (Koch, 2006; Morse et al., 2002). An argument can be made for any strategy that helps to establish a high level of rigour in qualitative research. Therefore, instead of using trustworthiness, this section borrows concepts from both positivist and constructivist paradigms to explore the concerns raised by reliability, transferability and validity; all of which represent similar components to trustworthiness. The application of these concepts within the current study will be expanded on further below.

#### **3.3.5.1 Reliability**

In quantitative research, reliability concerns the precise reproducibility of a study and its findings (Leung, 2015). However, the concept of reliability is less straightforward in qualitative research, where exact reproducibility of a study and its findings would be from a positivist perspective and epistemologically illogical given the diversity of paradigms and subjective nature of this approach (Golafshani, 2003; Leung, 2015). Therefore, reliability in qualitative research is more about consistency and providing a transparent and justified approach to the decisions made to provide the reader with a '*decision-trail*', which is both

clear and comprehensive (Noble and Smith, 2015, p. 34). As demonstrated in this chapter, the procedures in this study have been described in an in-depth manner to the degree that facilitates replication, albeit with non-identical findings. In addition, extensive justification of the research processes were documented to provide the reader with the rationale behind each choice, thus ensuring that they understand the steps taken which led to the study's final shape (Noble and Smith, 2015; Shenton, 2004). The reflective approach adopted for this study, as touched upon in a section further below and Chapter 7, aimed to increase the transparency of the research by providing the reader with my attitudes and perceptions and reasoning behind the decisions made during the research processes (Pillow, 2003). The research methods also provide a comprehensive outline of the data analysis techniques and coding processes, and this detailed account of the research procedures strengthen the study's reliability and replicability of the methods (Schwandt, 2007).

### **3.3.5.2 Transferability**

The transferability, also broadly termed generalisability, of qualitative research, refers to the degree to which the findings of an original study can be applied to another group, context or setting, and a clear sampling strategy, as well as an exhaustive reflection of the potential for transference in respect to the research question, should be demonstrated to achieve a high degree of transferability (Krefting, 1991; Malterud, 2001; Mays and Pope, 2000; Seale, 1999). It is essential to provide an in-depth account of the phenomenon being researched to ensure that the reader has a comprehensive understanding (Shenton, 2004). This in-depth knowledge and awareness then enables the reader to relate examples of the phenomenon in the research to their setting or context, thereby increasing its transferability (Kuper, Lingard and Levinson, 2008; Shenton, 2004). As suggested by Shenton (2004), the following information should be clearly documented to improve the transferability of study findings, including the number of organisations in the research and their location, the number of participants, the methods of data collection, the number and length of the sessions of data collection, the time span of the data collection period and any restrictions in the sample. This thesis provides a thorough description of all these components to aid the reader in any effort at transference, thus increasing the transferability of the study. Adequate justification is also outlined to act as an audit trail highlighting the decision-making process in regards to the methodological, theoretical and analytical choices made (Edge and Richards, 1998; Slevin and Sines, 2000).

In addition to improving the transferability of qualitative research, an in-depth descriptive account of the research processes can also increase the validity of a study (Golafshani, 2003; Noble and Smith, 2015).

### **3.3.5.3 Validity**

In qualitative research, validity is essential in achieving a high standard of rigour and refers to the suitability and appropriateness of the procedures, tools and data, and while it is more commonly aligned with quantitative research, its use has become more prevalent in the qualitative research paradigm (Cho and Trent, 2006; Golafshani, 2003; Leung, 2015; Morse et al., 2002). A variety of factors can influence the validity of research, including the sample selection, bias of the researcher and the data collection tools; therefore, it is necessary that these factors are accounted for and later addressed in the design of this study to improve the validity of the findings (Cohen, Manion and Morrison, 2011). According to Kimberlin and Winterstein (2008), the selection and development of a data collection method has a significant impact on the validity of research. The adoption of a qualitative methodological approach was suitable for the research question and objectives as it allows for the perceptions of participants to be explored through the data collection method of semi-structured interviews (Blandford, 2013). As an exploratory study researching a topic without much previous emphasis in the literature, this data collection method was judged as most closely aligned with the research question and objectives, thereby justifying its selection (Barker, Elliott and Pistrang, 2002).

As suggested by Cohen, Manion and Morrison (2007; 2011), the following factors were addressed to identify and minimise bias within the interviews to increase the level of validity: the interviewer's viewpoint and opinions, the interviewer's tendency of seeing the participant in their own image, the inclination of the interviewer to seek answers which align with their expectations, misunderstanding the participant's response, and the participant's misconception of what they were asked. The first three semi-structured interviews were utilised as pilot interviews to aid in the refinement of the questioning and procedures to minimise any bias and enhance validity by addressing the points raised above (Cohen, Manion and Morrison, 2007; Kim, 2010). During these pilot interviews, attention was paid to my mannerisms, phrasing of questions, segues between topics and the duration. Following the completion of the first three face-to-face interviews with participants, they were

subsequently transcribed, and guidance was then sought from the supervisory team to address and correct any identified issues for the subsequent interviews. In addition to the processes of data collection, the consideration of validity was also emphasised during the analysis stage of the research, as the coding of transcriptions were peer-audited by the supervisory team to achieve inter-rater reliability through extensive peer auditing (Armstrong et al., 1997; Barbour, 2001). This study attempted to increase and refine the validity of the results through the methods detailed above; however, absolute validity in the qualitative research paradigm is impossible, and some weaknesses still inevitably surface within this research.

### **3.3.6 Reflexivity**

Reflexivity refers to the researcher's awareness of their influence on the research processes and findings, and it is a useful methodological tool to both validate and reflect on the practices of qualitative research (Pillow, 2003; Thorpe and Holt, 2007). From the epistemological standpoint of social constructivism, reflexivity is a critical factor as the researcher is not seen as a passive observer, but instead as an active participant (Bellamy et al., 2016; Cater-Steel and Al-Hakim, 2008). According to Newton et al. (2011), the application of reflexivity in research varies, with some researchers utilising it to reduce their biases and prejudices on the data, while others use it to examine their subjectivity. While studies utilising a generic qualitative approach tend not to emphasise reflexivity to the degree that another methodology would, such as Interpretative Phenomenological Analysis (IPA), it was considered essential that it was sufficiently explored and documented to establish methodological rigour and quality in this study (Mertens, 1997; Shaw, 2010). When considering reflexivity in research, it is suggested by Caelli et al. (2003) that the researcher outlines their theoretical perspective, background, motivation and assumptions about the subject, as first captured within the preface section of this thesis (Cooper and Endacott, 2007). In addition, Baillie (2015) suggested that researchers use a notebook to build an audit trail documenting their thoughts, opinions, reasoning and judgement throughout the study to provide evidence of the decision-making process at all stages, thus maintaining a reflexive approach.

Therefore, as suggested by Baillie (2015) and Caelli et al. (2003), a notebook was used throughout the PhD to document my perceptions, rationale, theoretical perspective,

background and motivations; an example from which can be found in Appendix S. Using the notebook throughout the entirety of this study, the relationship with participants was continuously documented and examined to reflect on its influence on the collection of interview data. Reflexivity also related to how entrenched feelings, cultures, views and experiences could impact the interpretation of the findings, and the use of a notebook to document comments and impressions of the participants and their responses during the interviews was a vital part of the Framework Method of analysis (Gale et al., 2013). The notebook also served as a forum to record any additional thoughts, critiques and suggestions around the research process as a whole, thereby aiding in the identification of emerging themes by providing context to the data, as any notes specific to participants and their interviews were included within the matrix at the end of each row by use of © 2018 QSR International's NVivo 12 Software (Bazeley and Jackson, 2013). These reflective accounts of the research processes were regularly discussed with the supervisory team, where guidance was provided to help critique and establish my role as a researcher. As suggested by Lincoln and Guba (1985), the peer auditing from the supervisory team also contributed to the reflexivity of this study, as it documented the self-critical approach to conducting the research (Seale, 1999). The reflections examined throughout the study and following its completion, are expanded on in the Reflections of the Researcher Chapter (Chapter 7).

### **3.3.7 Selecting a Method of Data Capture**

The exploratory nature of this study necessitated the probing of a wide array of perspectives of patient safety in general, without restricting the participant to singular responses (Barker, Elliott and Pistrang, 2002). Researchers who have adopted the interpretivist paradigm frequently use qualitative methods of data collection, as they are consistent with this approach (Saks and Allsop, 2008). Methods such as semi-structured interviews, observation and focus groups facilitate the collection of data that allow researchers to consider and reflect on their understanding and meaning, the cultural and social underpinnings of experiences, and the relationship between the participant and researcher (Rubin and Rubin, 2011; Saks and Allsop, 2008). Through the selection and use of open-ended questions during in-depth semi-structured interviews with participants, the staff perceptions of patient safety were explored from a cultural, historical and social context (Creswell, 2014).



### **3.3.7.1 Semi-structured Interviews**

Semi-structured interviews were selected as they were determined to be the most suitable data collection method for this study, as they facilitated the full capture of the participants' varied perceptions by producing a deep understanding of their complicated relationship with patient safety (Atieno, 2009). Other qualitative data collection methods were proposed initially to accompany semi-structured interviews, such as focus groups and observation. Focus groups were considered as they can provide insight into a group's behaviour and are useful for examining issues and concerns on an organisational level (Krueger and Casey, 2014). However, despite the usefulness of this method, the addition of focus groups was later determined unsuitable due to practical considerations. Staff in the NHS Ambulance Services, similar to healthcare professionals in other care settings, are increasingly busy and time-poor. Therefore, the expectation was that it would be challenging to schedule individual semi-structured interviews, and possibly impossible to coordinate one or more well-designed focus groups with the suggested six to twelve participants at a time (Johnson and Christensen, 2017; Onwuegbuzie, Jiao, and Bostick, 2004). Given the hierarchical nature reported in the NHS Ambulance Services, focus groups were also not selected because it was felt that staff might be prevented from sharing their perspectives if a more dominant staff member was present (Krueger and Casey, 2014; Wankhade, 2009; 2012). The incorporation of observations was also weighed briefly, as it was thought they could be used to confirm the findings produced from the other data collection methods (Jamshed, 2014). However, this qualitative method was deemed inappropriate as too many questions were raised concerning who would be observed, where they would be observed and in what context.

While some weaknesses of semi-structured interviews exist, such as their time and resource exhaustive nature, this method has many strengths for qualitative research. The semi-structured format facilitates the exploration of areas that the interviewer was previously unaware of, as well as enables them to control the focus and flow of the conversation (Miles and Gilbert, 2005; Galletta and Cross, 2012). This format also allows the participants to communicate views and experiences at their own pace and on their terms, resulting in qualitative data that are both reliable and comparable (Cohen and Crabtree, 2006). In addition, this method is conducive for establishing a rapport between the participant and interviewer, as well as for stimulating their engagement and participation

with face signals and verbal encouragement (Barriball and While, 1994). In conclusion, semi-structured interviews were determined to be the most appropriate method to meet the research aim of exploring and characterising the staff perceptions, knowledge and understanding of patient safety across a range of organisational levels in the NHS Ambulance Services.

### **3.3.7.2 Data Collection Protocol**

Face-to-face interviews were the preferred medium compared with telephone interviews, as social cues can afford the interviewer more information, thereby complementing their verbal answer by providing additional context (Opdenakker, 2006). Face-to-face interviews were also preferable as it reduced the time delay between the question and answer, producing a more organic and reactive discussion with the participant (Opdenakker, 2006). All semi-structured interviews that were conducted in-person took place on-site at an Ambulance Service NHS Trust in a participant's office, a private room of a colleague or in a communal meeting area, representing settings that were comfortable, quiet and typically selected by the participant. When required, such as when a participant could not meet face to face, phone interviews were conducted in an office at Edge Hill University, where minimal disturbance and noise were anticipated. Overall, out of the total 44 participants, 23 were interviewed through a telephone, while 21 were interviewed face-to-face. While face-to-face interviews were preferred, the interviews conducted over the phone provided no significant differences regarding content and substance (Sturges and Hanrahan, 2004). The only observed difference between the interviews conducted face-to-face and over the telephone was time, where the duration of the latter was shorter on average than in face-to-face interviews.

The semi-structured interviews were expected to last up to an hour each. However, depending on the schedule of each participant, additional time was regularly allocated as a precaution. Notes were taken to record thoughts and ideas about the interview environment, the concepts discussed and the participants in general. Note-taking was kept to a minimum while the interviews were underway, as it was feared that some key points might be missed and that it might be distracting or uncomfortable to the participant (Knox and Burkard, 2009; Jamshed, 2014). However, through a reflexive approach, aided by the Framework Method of analysis, notes were extensively taken from memory immediately following the

conclusion of each interview and later used to contextualise a profile of the participants and their responses. The audio files from the interviews were then transcribed verbatim and stored on an Edge Hill University server, where notes accompanied them, comprising the data for the study (McLellan, MacQueen and Neidig, 2003).

### **3.3.7.3 Equipment and Materials**

An interview guide, or schedule, offers a structure for focussed conversation, ensuring that topics are systematically addressed by all participants (DiCicco-Bloom and Crabtree, 2006; Jamshed, 2014). For this study, an interview schedule was developed to provide prompts for discussion, thereby guiding the flow of each semi-structured interview. The prompts for discussion outlined in the interview schedule (Appendix F) were aligned with the aim and objectives of the research and were informed by the broader literature (Creswell, 2012). The questions asked were open and directed by the topics and subtopics listed on the interview schedule, thereby empowering the participants to answer in more depth and refer back to any previous responses or issues over the course of the interview (Neergaard et al., 2009; Lewis, 2015). It was important during the interviews that the participants were not asked questions of a leading nature, that they were given enough time to respond and that all of their social cues were picked up (Britten, 1995). The interview schedule comprises four main topics with eleven sub-topics that were flexible and allowed the questions to be adapted to fit the participant's role, organisation and the context of the previous conversation.

An additional set of prompts were developed to explore responses in more depth. Cues like '*would you mind elaborating on that*', and '*could you explain that further*' helped to ensure that all participants were responding on an equitable basis regarding text and substance. However, while the topic guide and supplemental document provided prompts for discussion, it was not meant to be prescriptive and instead acted as a general starting point, allowing the conversation to evolve organically and dynamically. This supplemental document was not distributed to participants and was used by the interviewer as a reference guide, listing definitions for terms such as organisational culture and safety culture, in case any participants were unsure of their meanings. Demographic information was sought in this qualitative study, as it can be useful during the analysis stages by providing additional context to responses (Noy, 2008). Each interview began with some basic demographic

questions, including the participant's age, gender, role, duration of employment, educational background and country of origin. However, it was reiterated at this point to participants that any identifying demographic information would not be included in the dissemination of this work and that they did not need to answer. The full interview schedule can be found in Appendix F and is summarised below:

- **Patient Safety**

- *Understanding and interpretation of the term patient safety*
- *The most important risks to patient safety*

- **Patient Safety Incidents**

- *Causes of patient safety incidents and participants' knowledge of reporting procedures & support systems*
- *Importance of patient safety within immediate team*
- *Perception of a blame culture surrounding patient safety incidents*
- *Familiarity with the National Reporting and Learning System, e.g. figures on patient safety incidents*

- **Organisational and Safety Culture**

- *Organisational/patient safety culture: perception, knowledge, prioritisation, organisational learning*
- *Barriers and facilitators: what doesn't work and how could it work better*
- *Perception of the influence of communication and teamwork on patient safety*

- **Recommendations and Conclusions**

- *Do you have any suggestions to improve patient safety within your organisation?*
- *Are you able to tell me any additional information about patient safety in your organisation?*

A digital recorder was used to digitally audio-record the interviews, conducted both in person and over the phone. A notebook and pen were also used to facilitate the note-taking process described above in the protocol section.

### **3.3.8 Ethical Considerations**

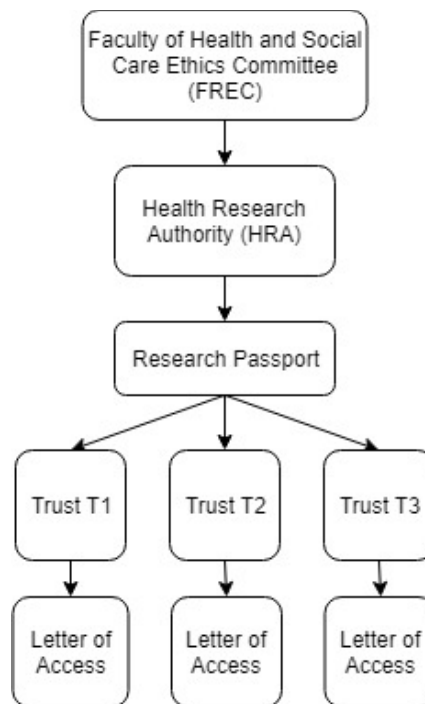
Many ethical issues can emerge in qualitative research that have to be both considered and addressed to protect participants (Kaiser, 2009; Houghton et al., 2010). Qualitative research can be ethically unpredictable at times, demanding that those involved remain continually

aware and knowledgeable of the potential impact on participants and other stakeholders (Polit-O'Hara and Beck, 2006; Houghton et al., 2010). In total, this qualitative study involved in-depth semi-structured interviews with 44 participants in the English NHS Ambulance Services. It has been argued that interviews present the risk of significant ethical issues which should be addressed before, during and after their completion (Kvale, 2007; Rabionet, 2011). Within this study, the main ethical challenges were the possible disclosure of unsafe or illegal practice, a potential breach of anonymity and confidentiality, informed consent and data management (Kvale, 2007; Rabionet, 2011). Compliance with Edge Hill University policy and ethical documentation was maintained and reviewed continuously throughout the completion of this study, and the sections below discuss the ethical issues that were addressed, as well as the ethical approvals that were obtained.

### **3.3.8.1 Ethical Approval**

Ethical approval for this research was first required from the Faculty of Health and Social Care Ethics Committee (FREC) at Edge Hill University. As NHS Ambulance Service staff were involved as participants, ethical approval from the Health Research Authority (HRA) was also necessary. Ethical approval from FREC was granted on the 9 May 2017, and HRA approval was subsequently secured on the 18 August 2017 for three Ambulance Service NHS Trusts in England: Trust T1, Trust T2 and Trust T3. Following authorisation granted by both FREC and HRA respectively, a research passport form was then completed and sent to each of the three participating Ambulance Service NHS Trusts involved in the study. Following receipt of the three letters of access, these efforts concluded the ethical approval process and permitted the interviewing of NHS Ambulance Service staff, which began in late September 2017 at NHS Trust T1. Absolute adherence to university policy and ethical documentation during the study was considered paramount and has been continuously reviewed to ensure absolute compliance at all times. The ethical approval documents described in this section can be found in Appendix A, B and C, and a diagram of the process is outlined below:

**Figure 8: Ethical Approval Process**



### **3.3.8.2 Disclosure of Unsafe or Illegal Practice**

Health researchers are presented with the dilemma of needing to protect participants and their confidentiality while having to report unsafe or illegal clinical behaviour disclosed during the interviews (Wiles et al., 2008). As this research involved data collection that aimed to capture the perceptions of patient safety of NHS health professionals, it was possible that participants would divulge inappropriate or illegal clinical practice. Therefore, a disclosure protocol was developed, and the guidelines were adhered to during each interview. If any participants disclosed unsafe, illicit or illegal behaviour, the proper authority working within the NHS Trust would be alerted immediately following a discussion with the participant in question. It was also possible that participants may disclose potentially unsafe practice. In this instance, guidance provided by Edge Hill University concerning disclosure of unsafe practice would be referenced, and clarification would be sought from one member of the supervisory team with a clinical background, who would help decide if further action was required.

### **3.3.8.3 Anonymity and Confidentiality**

Preserving the anonymity and confidentiality of participants in qualitative research can be difficult due to the in-depth and personal nature of data collection (Houghton et al., 2010; Baez, 2002). Unique identifier codes, such as '[A2-T1]' and '[C1-T3]', were used in place of participant names and any potentially identifiable information in interview transcripts was removed to protect anonymity and confidentiality (Polit-O'Hara and Beck, 2006). The assigned unique identifier codes denote the organisational level of participants (operational, management, executive) and their respective specific Ambulance Service NHS Trust (Trust T1, Trust T2, and Trust T3), thereby providing additional context to the responses of participants in the Findings Chapter (Chapter 4) (Kaiser, 2009). However, no further information is available to the reader from these codes, and their application in the study will be further explained in the next chapter.

Anonymity concerns stemming from demographic questions around gender and nationality were preserved by reporting only summary participant characteristics. Nationality was considered significant because, as discussed in the Introduction Chapter (Chapter 1), the NHS Ambulance Services are experiencing a paramedic shortage, and it has become common to hire paramedics from Finland, Poland, Australia, Canada, as well as other countries to fill those gaps (Migration Advisory Committee, 2015). Participants who are from outside of the United Kingdom may reflect on their understanding of and experiences with patient safety from both international and British perspectives. While nationality was considered significant in the context of this study, if a participant disclosed that they were a citizen of an overseas country, the title of the specific nation was omitted from the analysis. The anonymisation of each interview transcript included the task of labelling a participant as having a 'United Kingdom' nationality or a nationality described as 'Overseas/Foreign Worker'. Data concerning nationality were anonymised further when there was a possibility of an employee being identified. For example, if a participant was from somewhere outside of the United Kingdom, and they have a unique identifiable title within their organisation, or if they had recognisably unique responsibilities, their nationality details were excluded. The same precautions were taken with the gender, age and education level of each participant.

### **3.3.8 Data Management**

The electronic and physical management of collected data is a significant aspect of the research process (Surkis and Read, 2015). Data management for this research was developed in compliance with the research data management guidelines set forth by Edge Hill University. Electronic data were securely stored on password protected computers at Edge Hill University, and access to the data was and is currently restricted to the researcher and supervisory team. All physical copies of the consent forms were scanned and uploaded to be stored securely electronically. After being scanned and uploaded to the password protected Edge Hill University servers, the researcher saved all physical copies of the data in a locked cupboard in their Edge Hill University office. Following the completion of the PhD contract at Edge Hill University on 18 September 2019, all physical and digital copies of the data were given to the Director of Studies, who will manage its storage for ten years following publication of the thesis, per university policy.

### **3.3.9 Data Analysis**

The available literature on generic qualitative inquiry does not specify a particular method of data analysis, and studies utilising this methodology have adopted a wide variety of approaches (Cooper and Endacott, 2007; Cross et al., 2005; Pope, Ziebland and Mays, 2000). Despite the lack of a standardised method of data analysis, Lim (2011) argued that generic qualitative studies aim to provide an in-depth and comprehensive analysis of a phenomenon by incorporating approaches that are inductive and utilise open codes and categories, such as with thematic analysis (Kahlke, 2014). Framework analysis, or the Framework Method, is a conventional method of analysis of the open-ended question format common in semi-structured interviews and is regularly referred to as qualitative content analysis or thematic analysis, as these methods follow a similar approach (Gale et al., 2013; Jamshed, 2014). The primary distinction in the Framework Method is in the output that it produces: a matrix structure that condenses the data to facilitate the analysis by case and code (Gale et al., 2013; Ritchie and Spencer, 2003). The cases (rows) represent singular participants, ensuring that the responses remain closely associated with the participant, while a comprehensive analysis of the entire dataset can identify critical themes (Srivastava and Thomson, 2009). Identifying similarities and differences in data is fundamentally important in qualitative data analysis, and the Framework Method aids in this process by organising the data into the open matrix format (Green and Thorogood, 2009; Ritchie and



Spencer, 2003). This visually open matrix structure can highlight emerging themes in the data, draw focus to empty cells and identify irregular cases and contradictory data (Gale et al., 2013). For these reasons described above, the Framework Method was selected for the management and analysis of the large qualitative dataset in this current study. The use of the Framework Method was informed by the principles found in the published guidelines, which will be highlighted further below in Table 18 (Ritchie and Spencer, 2003; Ritchie et al., 2014).

Due to the methodical nature of the Framework Method, some researchers have applied this method of qualitative analysis to a deductive approach, which is common when the research objectives have been established previously and when the researchers are seeking a fixed set of information (Cooper and Endacott, 2007; Cross et al., 2005). However, the Framework Method is not restricted to either deductive or inductive thematic analysis, and the approach depends on the research aim and question (Gale et al., 2013). As this study aimed to explore the perceptions of patient safety, an inductive approach allowing for more open-ended questions during interviews was considered necessary (Redwood, Gale and Greenfield, 2012). The use of semi-structured interviews accommodates the open-question format, and the Framework Method is frequently used for the thematic analysis of this method of data collection (Gale et al., 2013; Jamshed, 2014). Framework analysis is comparable to that of grounded theory (GT); however, it varies from GT as it is more suitable for research with a fixed research question, finite timescale, purposeful sample and pressing organisational issues (Srivastava and Thomson, 2009). As the criteria described by Srivastava and Thomson (2009) applies to the current study, the Framework Method was determined to be the most appropriate method of analysis.

Although somewhat flexible, the Framework Method is also highly systematic and requires that researchers follow seven stages of data organisation and analysis. Gale et al. (2013) detailed seven individual steps for adopting the Framework Method approach to thematic analysis, all of which were followed closely and diligently throughout the data analysis in this study. These stages are summarised in the table below:

**Table 18: Stages in the Framework Method**

<b>Stages</b>	<b>Procedure</b>
<b>Stage One: Transcription</b>	A high-quality verbatim transcription of each semi-structured interview is necessary. It is not required to document the pauses of participants and mispronunciations, as it is most important to capture the substance and content of the responses. The transcription process allows the individual conducting the Framework Method analysis to become fully absorbed and engaged in the data.
<b>Stage Two: Familiarisation</b>	Following stage one, it is vital in the interpretation to become familiar with the content of each interview through continual and renewed engagement with the transcript, audio file, as well as any additional notes taken.
<b>Stage Three: Coding</b>	Once familiarised, the transcripts are then read line by line while a code is ascribed to passages that are interpreted as significant. Coding line by line can help to reduce the amount of data that is ignored or classified as irrelevant, as this approach confirms that all concepts are thoroughly reviewed. These codes can concern any critical information identified in the data, including beliefs, emotions, behaviours and other more evocative content. These codes organise the data in a way that enable it to be compared and contrasted with the rest of the dataset. During the coding stage, it is crucial that it is not done in an exact or precise way, and that unanticipated data are accounted for, which is where several coders represent an advantage through peer-auditing. Iterations of the coding process can lead to a stronger and more rigorous analysis of the data by minimising inconsistencies and exploring all areas of the transcripts. The coding process can be done by hand, or with the support of software as this study relied on, such as © 2018 QSR International's NVivo 12 Software (Bazeley and Jackson, 2013).
<b>Stage Four: Developing Analytical Framework</b>	Members of the research team should meet following the coding of the first several transcripts to make certain that there is an agreement of the labels, codes and process up to that point which can be followed in the coding of subsequent transcripts. The codes can then be assembled into broader categories, forming the basis of an analytical framework. It may be necessary to repeat this step a number of times until no new codes appear. To ensure no data are disregarded, each category should have a designated 'other' code that will encompass any data that decidedly do not fit. The analytical framework is not complete until after the coding of the final transcript.
<b>Stage Five: Applying Analytical Framework</b>	Following stage four, the developed analytical framework is then implemented by indexing further transcriptions with the codes and categories that have already arisen in the previous transcripts. This process is aided by the use of computer programmes like © 2018 QSR International's NVivo 12 Software, which stores and organises the transcripts, codes, and categories in a systematic and easily accessible format (Bazeley and Jackson, 2013). Although viewed as an invaluable tool in the analysis process, coding software does not analyse the qualitative data.
<b>Stage Six: Tabulating Data in Matrix</b>	As interviews can produce a substantial amount of qualitative data, it is essential to condense and outline the dataset into an organised and navigable format during the stages of analysis. In this stage, a matrix is developed using a spreadsheet, and data are then summarised by category and tabulated into the matrix. It is vital during this stage to abide by a level of consistency amongst the research team when summarising the data. According to Gale et al. (2013), quality tabulating involves accurately portraying the data while making it as concise as possible. The table should also incorporate verbatim quotes selected for their substance or striking qualities. Software such as © 2018 QSR International's NVivo 12 Software, utilised in the analysis of this research, can generate framework matrices after designating the cases and codes involved, thereby alleviating the need to develop the table by hand, aiding in its organisation and accessibility (Bazeley and Jackson, 2013).
<b>Stage Seven: Interpreting</b>	At this stage, commonalities, differences and significant features of the data are established through the investigation of emerged concepts, typologies and the

<b>Data</b>	relationships between categories (Gale et al., 2013). Depending on the richness of the dataset, the findings may explain a phenomenon development, a prediction of how an individual or organisation may respond to an event, or it may identify issues within the organisation or system that are acting as barriers (Gale et al., 2013). Stage seven may take longer than expected, and it is important that an adequate amount of time is allowed to interpret the data correctly. It is also useful to reflect on past notes during the data collection process to aid in the interpretation of data, especially if this process has taken a substantial amount of time.
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(Gale et al., 2013; Green and Thorogood, 2009; Ritchie and Spencer, 2003)

The seven stages in the table above were followed for the analysis of data as per the guidelines set forth by Gale et al. (2013), and © 2018 QSR International's NVivo 12 software was utilised for the management and organisation of the dataset (Bazeley and Jackson, 2013). An initial analysis began while the data collection was ongoing during the process of transcribing the interviews. After each subsequent interview was conducted and transcribed, the constant comparative technique was applied to allow for the continued comparison across cases and within cases to revise and refine each emerging theme (Gale et al., 2013; Green and Thorogood, 2009; Ritchie and Spencer, 2003). The constant comparative method was a technique first developed as a component of grounded theory research (Glaser and Strauss, 2000). However, this technique can be used outside of the grounded theory methodology and is particularly prominent in the Framework Method, as the matrix format facilitates these comparisons (Fram, 2013; Gale et al., 2013). The matrix structure in the Framework Method acted as a pivotal tool in identifying the themes and sub-themes across the dataset of 44 individual semi-structured interviews, all of which will be described in-depth throughout the Findings Chapter (Chapter 4). While transcribing, notes taken after each interview were added as comments to the text, thereby contextualising the responses of participants and highlighting essential concepts and ideas that were raised during the interviews to aid in the later analysis of data. The Framework Method is adaptable enough to include this non-interview data, and these notes were added to the matrix when relevant (Gale et al., 2013). The transparency of the data analysis was increased by providing an example of the process of analysing the dataset, which can be found in Appendix K, as well as with notes taken during interviews (Appendix O) and within the © 2018 QSR International's NVivo 12 Software (Appendix P) (Bazeley and Jackson, 2013).

### 3.4 CHAPTER SUMMARY

The Methodology and Methods Chapter provided an overview of the qualitative methodological approach that was adopted to research the staff perceptions of patient

safety in the NHS Ambulance Services. This chapter aimed to present an open and transparent explanation of the research process, including the justification of each step taken to ensure a high level of quality and rigour. However, it is important to emphasise that the research outlined here did not develop linearly and was one that relied on an adaptive and evolving process based on trial and error.

The findings from the research are presented in the following chapter. Built on the perceptions, experiences, storied accounts and verbatim quotes of staff, the results in this chapter provide structure and depth to the discussion.

## **Chapter 4 - Findings**

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### **4.1 INTRODUCTION**

The previous chapter outlined the methodology and methods followed for this study, and in this chapter, the findings following the implementation of those methods are presented. Firstly, a tabulated summary of the demographic characteristics of the participants in Ambulance Service NHS Trusts T1, T2 and T3 is detailed in an anonymised format to mask any identifiable information. The findings, which follow the demographic characteristics, are structured into dominant and corresponding subdominant themes as identified by the analytical framework that was developed and applied during the analysis of the qualitative data. These themes were then explored across and within organisations to determine the similarities and differences according to the organisational level and Ambulance Service NHS Trust. The evidence presented in this chapter is supported by quotations from participants and notes taken during the data collection process, before then leading into the Discussion Chapter (Chapter 5), which locates this study within the broader body of literature.

### **4.2 PARTICIPANT CHARACTERISTICS**

A total of 44 participants representing three different organisational levels of staff from three English Ambulance Service NHS Trusts were interviewed. As discussed within the sampling frame section in the previous chapter, a target of three to eight participants was established for recruitment from each organisational level (operational, management, executive) across the three Ambulance Service NHS Trusts (Trust T1, Trust T2, Trust T3). While the recruitment process and rates ultimately varied per organisational level and NHS Trust, the final recruitment numbers remained on target and Table 19 below provides a stratified outline of the number of participants in this study according to their respective NHS Trust and organisational-level:

**Table 19: Total Number of Participants by NHS Trust and Organisational Level**

	Trust T1	Trust T2	Trust T3	Total
<b>Executive-Level</b>	4	3	3	10
<b>Management-Level</b>	6	5	5	16
<b>Operational-Level</b>	5	6	7	18
<b>Total</b>	15	14	15	44

While the aim was to achieve uniformity in these final numbers, several difficulties inevitably arose during the recruitment process, leading to a slight variation in the number of participants representing each NHS Trust and organisational level. For example, in Ambulance Service NHS Trust T1, management and executive-level staff were recruited quite quickly, while operational staff were far more challenging to recruit. However, the inverse of this problem manifested in the subsequent two NHS Trusts, where operational staff were recruited without many issues, while many challenges were faced with recruiting higher-level staff.

As mentioned in the Methodology and Methods Chapter (Chapter 3), interviews with participants were conducted either in person or over the telephone, where each conversation was recorded digitally and transcribed verbatim. A summary table containing the demographic characteristics of the participants, including their organisational level, gender, age, work experience, level of higher education and the medium used for the interviews is detailed below. It should be noted that while Table 20 below contains participant characteristics, such as the age and experience of participants, it only provides the total within unidentified NHS Trusts, thereby protecting the anonymity of the individual participants.

**Table 20: Participant Characteristics**

	NHS Trust T1	NHS Trust T2	NHS Trust T3	Total
<b>Total</b>	15	14	15	44
<b>Age</b>				
<40 years old	3	6	9	18
≥40 years old	12	8	6	26
<b>Experience in NHS Ambulance Services</b>				
0 to 5 years	2	3	6	11
6 to 10 years	1	4	3	8
11 to 15 years	2	4	2	8
16 to 20 years	5	1	2	8
21+ years	5	2	2	9
<b>Gender</b>				
Female	6	5	7	18
Male	9	9	8	26
<b>Highest Level of Educational Attainment</b>				
No University Degree	4	3	3	10
Undergraduate Degree	3	1	8	12
Postgraduate Degree	8	10	4	22

As mentioned in the previous chapter, each participant was assigned a unique identifier for anonymisation purposes, as well as to designate their organisational level and in which NHS Trust they have employment. The letters A, B and C denote the organisational tier of each participant's role as follows:

- A = Executive-level staff
- B = Management-level staff
- C = Operational-level staff

The three English Ambulance Service NHS Trusts involved in the research have also been allocated a value of either T1, T2 or T3. These NHS Trust values were then paired with the letters A, B or C to indicate each participant's assigned organisational level and Ambulance Service NHS Trust, constituting each of the 44 unique identifier codes for participants. For example, a unique identifier code of [B3-T2], designates that this individual was the third participant from the management level to be interviewed within NHS Trust T2. As this research is exploring the perceptions of staff in regards to their role and NHS Trust, it was determined significant to assign labels that both anonymise and contextualise the responses of participants.

### 4.3 THEME DEVELOPMENT

As discussed in the preceding chapter, the semi-structured interviews were analysed using the Framework Method of qualitative data analysis. Following familiarisation, coding and analytical framework stages as seen in Table 18, emergent categories were grouped into subdominant themes which were subsequently joined to form dominant themes. An example of this process can be seen below in Table 21, which demonstrates how the subdominant and dominant themes were developed. As a result of the process of qualitative data analysis informed by Gale et al. (2013), the following five dominant themes were identified: *Varied Interpretation of Patient Safety*, *Significant Patient Safety Risks*, *Reporting Culture Shift*, *Communication* and *Organisational Culture*, representing the overall perceptions of patient safety by staff in the NHS Ambulance Services.

**Table 21: Development of Subdominant and Dominant Themes**

Dominant Themes	Subdominant Themes	Emergent Categories
<b>Varied Interpretation of Patient Safety</b>	Systems Thinking	<ul style="list-style-type: none"> <li>- Patient safety encompasses everything in the systems</li> <li>- Policies, strategies, procedures</li> <li>- Responsibility as an organisation to provide safe care</li> <li>- Sits at the heart of what they do</li> </ul>
	Direct Patient Care	<ul style="list-style-type: none"> <li>- Not putting the patient at risk</li> <li>- Preventing errors and harm</li> <li>- Related to clinical treatment</li> </ul>
<b>Significant Patient Safety Risks</b>	Service Demand Pressures	<ul style="list-style-type: none"> <li>- Under enormous pressure to respond to 999 calls</li> <li>- Presents massive patient safety risk</li> <li>- Demand continues to rise</li> </ul>



		<ul style="list-style-type: none"> <li>- Demand takes priority over everything else</li> <li>- Scope of NHS Ambulance Services is increasing to deal with lapses from other care settings</li> <li>- Lacking workforce and infrastructural coping resources</li> <li>- Frustration with non-emergency patients</li> <li>- Growing number of calls are not life-threatening</li> <li>- Patients lack responsibility</li> <li>- Frequent callers</li> <li>- Taking resources away from emergency patients</li> <li>- Front-line fatigue causing accidents</li> <li>- Not responding to patients in a timely manner</li> <li>- Crews stuck at hospitals/non-emergency patients</li> <li>- Delay is built into everything</li> <li>- Patient condition deteriorating over time</li> </ul>
	Triaging	<ul style="list-style-type: none"> <li>- First point of contact with patients</li> <li>- Significant impact on patient safety</li> <li>- Inadequate triaging of patients</li> <li>- 'Genuine' patients aren't prioritised while questionable ones are</li> <li>- Triage system and categorisation algorithm is faulty</li> <li>- EOC staff lack clinical skills</li> <li>- EOC staff lack autonomy</li> </ul>
	Lack of Training and Deskilling	<ul style="list-style-type: none"> <li>- Level of training is minimal</li> <li>- Staff do not receive training for many changes</li> <li>- Linked to a lack of funding and pressures of demand</li> <li>- Knowledge and skill decay from training/not seeing patients</li> <li>- Lacking clinical knowledge to treat patients safely</li> <li>- Practising with antiquated information</li> </ul>
<b>Reporting Culture Shift</b>	Historically Inadequate	<ul style="list-style-type: none"> <li>- Evident blame culture in the past</li> <li>- Staff would be punished for reporting</li> <li>- No responsibility to report</li> <li>- Services did not have a robust reporting system</li> <li>- Incidents were not reported</li> </ul>
	Getting Better	<ul style="list-style-type: none"> <li>- Increase in reporting by staff</li> <li>- Blame culture has gone or being minimised</li> <li>- Reporting system - Datix®</li> <li>- Staff feel encouraged to report incidents without fear</li> <li>- Trust communication and guidance around reporting</li> <li>- Shift within previous couple years</li> </ul>
<b>Communication</b>	Infrastructural Resources	<ul style="list-style-type: none"> <li>- Tech is outdated</li> <li>- Not fit for purpose for NHS Ambulance Service work</li> <li>- Rely on staff to use their own devices</li> <li>- Lack of funding/motivation to modernise tech for communication</li> <li>- Adapt to the technology needs of new staff</li> <li>- Need to communicate with staff while in vehicles</li> <li>- Better utilisation of internet, social media, apps</li> <li>- Read-receipts on digital messages</li> <li>- Find innovative ways to get information out to staff</li> <li>- All staff do not use a specific form of communication</li> <li>- Effectiveness of channels is unknown/need to evaluate each to see who it reaches vs who it does not</li> <li>- Using one method or channel will not get to everyone</li> </ul>

		<ul style="list-style-type: none"> <li>- Send communication over all channels</li> <li>- Staff needs are different</li> <li>- Improve individual channels to reach more staff</li> </ul>
	Workforce Resources	<ul style="list-style-type: none"> <li>- Staff are too busy to read communication</li> <li>- Missing opportunity for discussion</li> <li>- Expected that staff read communication outside of work or during lunch breaks</li> <li>- Staff do not read outside of work and information goes unseen</li> <li>- Cannot digest information</li> <li>- Operate over huge geographical areas</li> <li>- Isolated within ambulance away from the station</li> <li>- Challenges around getting staff together</li> <li>- Management and front-line never see each other</li> </ul>
<b>Organisational Culture</b>	Organisational and Cultural Legacy	<ul style="list-style-type: none"> <li>- Emergency service beginnings</li> <li>- Embedded culture from past</li> <li>- Difficult to change historical perceptions</li> <li>- Different paramedic role and responsibilities</li> <li>- Risk aversion - conveyance to hospital</li> <li>- Minimising risk for practitioner/not what is best for patient</li> <li>- Evident military-style hierarchical structure</li> <li>- Varying perceptions, attitudes, cultures in each organisational level</li> <li>- Nature of NHS Ambulance Services where staff do not see each other</li> <li>- No understanding of roles across organisational levels</li> <li>- Front-line staff feel things are 'done to them' and are not a part of trust change</li> <li>- Lack of support for front-line staff</li> <li>- Lacked clinical education and knowledge</li> <li>- Services were more focussed on targets than care</li> <li>- Pressures to respond in a set amount of time</li> <li>- Evident performance culture</li> <li>- Nationally set targets are prioritised over patient safety</li> </ul>
	Becoming a Learning Organisation	<ul style="list-style-type: none"> <li>- Increase the training and education of all staff</li> <li>- Culture change takes time and energy – slow</li> <li>- Open infrastructure to discuss mistakes</li> <li>- No punishment, only learning from errors</li> <li>- Ensure staff are supported and empowered within the organisation</li> <li>- Staff will then come forward about mistakes/errors</li> <li>- Increased knowledge sharing between levels</li> <li>- Existing need to learn about each others' roles</li> <li>- Changes perspective of staff and fosters a better culture</li> <li>- Knowledge of other roles improves team-working</li> <li>- To manage people, you need front-line experience</li> <li>- Reduce layers and hierarchy between staff</li> <li>- Leadership directs values/ethos of organisation</li> <li>- Distributed leadership model</li> <li>- Leadership from top-down</li> </ul>

\*EOC = Emergency Operations Centre

#### 4.4 DOMINANT THEME ONE: VARIED INTERPRETATION OF PATIENT SAFETY

**Varied Interpretation of Patient Safety** > *Concept of patient safety is dependent on role and context*

**Systems Thinking** > *Patient safety is externally defined by the organisation*

**Direct Patient Care** > *Patient safety is about minimising clinical risk in practice*

The first dominant theme captured the perceptions of participants concerning their interpretation of patient safety within the NHS Ambulance Services and was formed following the identification of two subdominant themes: *Systems Thinking* and *Direct Patient Care*. During the interviews, participants defined their interpretation of patient safety, generally describing the concept either in the context of patient harm during clinical treatment or with a systems thinking approach, where they emphasised the interconnectivity of different parts within the organisation. It was evident from the responses of participants that the understanding of patient safety was closely associated with their organisational level of either operational, management or executive, as their interpretation typically mirrored or reflected their organisational duties and the scope of their role. A majority of management and executive-level participants interpreted patient safety with a systems thinking approach, encompassing system and organisational-wide factors such as structures and procedures which ultimately influence the safety of patients and have the potential to cause harm. This view differed at the operational-level, where participants interpreted it solely in terms of direct patient harm, including incidents, adverse events and medical errors. This division in the interpretation of patient safety according to organisational level was noticed by some participants, and is summarised in the quote below:

*‘...it’s totally different from what it is on the front-line to Board. People measure it and appreciate it in a totally different way’ [A1-T2]*

The sections below present the findings from the dominant theme of *Varied Interpretation of Patient Safety*, including the two subdominant themes of *Systems Thinking* and *Direct Patient Care*, within the NHS Ambulance Services. The divide illustrated in the quote above is evident in the following table, which provides a reference for the number of staff who contributed to the development of the dominant and subdominant themes according to each NHS Trust and organisational level.

**Table 22: Participants Contributing to *Varied Interpretation of Patient Safety***

		Executive			Management			Operational		
Dominant Themes	Subdominant Themes	T1 (*4)	T2 (*3)	T3 (*3)	T1 (*6)	T2 (*5)	T3 (*5)	T1 (*5)	T2 (*6)	T3 (*7)
Varied Interpretation of Patient Safety	Systems Thinking	4	2	2	4	3	3	-	-	1
	Direct Patient Care	-	1	-	1	1	1	4	4	6

\*Number of Total Participants in Individual Categories ('-' denotes that zero participants contributed)

#### 4.4.1 Subdominant Theme: Systems Thinking

A total of 19 participants, belonging predominantly to the executive and management-levels, interpreted patient safety broadly and in the context of systems thinking, or how things are connected and interrelated within the context of a larger system, including structural and procedural aspects of the NHS Ambulance Services. At the executive-level, participants almost unanimously interpreted patient safety as being '*...throughout everything we do, really, patient safety*' [A1-T1], where they described it in terms of governance responsibilities, including management systems, procedures and accountability measures, such as resource management and protocol development, which are perceived as having an indirect impact on patient safety:

*'Safety's at the heart of everything we do, so our procedures, our protocols.'*  
[A1-T3]

*'...there is a formal governance statutory responsibility to patient safety. All of what we do in this Directorate really is linked to how we as an organisation care for patients'* [A3-T2]

Executive-level participants almost exclusively interpreted patient safety as an established and entrenched omnipresent feature of the NHS Ambulance Services, and as demonstrated in the above quotes, executives predominantly explained patient safety on behalf of the entire Directorate within their NHS Trust by describing an existing collective interpretation of patient safety shared by sitting execs and non-execs on the board:

*'...the board are more interested in patient safety on a more global holistic perspective'* [A1-T2]

This holistic interpretation also represented the views of a majority of management-level participants, as middle-managers also interpreted patient safety in terms of systems thinking, but with more of an emphasis on management and implementation, such as improving systems, making sure that people do their jobs correctly and managing risk:

*'...looking at the lessons learned and people and the people's behaviour, and also the systems in place that either have allowed or not allowed this to happen'*  
[B1-T3]

*'...patient safety is about maximising quality and reducing instances of harm, but it's also about managing risk.'* [B4-T2]

Similar to the executive-level participants, those from the management-level also discussed patient safety as being ingrained throughout every aspect of their role and responsibilities with the patient in the centre:

*'Patient safety is about making sure that everything that I put in place, my whole strategy that I put in place, my action plan that I put in place, has the patient at the very centre of it.'* [B5-T3]

While the majority of executive and management-level participants defined patient safety holistically and as a systems-wide element existing throughout their organisations, many differentiated their interpretation of patient safety with one focussed on direct patient care, including incidents and patient harm:

*'...it's not just the incident; it's a long-term thing.'* [A3-T1]

*'It's not just patient safety sort of incidents and injuries sort of thing which a lot of people would probably say. It's more like what are we doing that might either improve or contribute to improve patient safety generally, not just to that particular patient or that particular time.'* [B1-T1]

The variation in how patient safety is interpreted by NHS Ambulance Service staff is embodied in the above quotes. While almost all executive-level participants and management-level participants defined patient safety using a holistic and systems thinking approach, the interpretation of patient safety by operational-level participants concerned incidents and patient harm during direct patient care.

#### 4.4.2 Subdominant Theme: Direct Patient Care

Eighteen participants interpreted patient safety as the prevention of harm to patients without discussing any of the broader systems thinking aspects raised in the previous section. Unlike the previous subdominant theme, *Systems Thinking*, almost all participants contributing to *Direct Patient Care* were from the operational-level, while the representation from the management and executive-levels was minimal. In contrast to the interpretation of patient safety, which was broad and concerned interconnected systems, operational-level participants instead interpreted patient safety as the prevention of harm during the provision of clinical treatment and care:

*‘...that’s what defines patient safety, it’s the prevention of unnecessary harm and reduction of errors while treating patients’ [C3-T2]*

*‘Do no harm to patients, yeah, so don’t make any situation any worse than it already is.’ [C4-T2]*

While some participants described patient harm more generally, many participants emphasised harm, errors, or the processes involved in treating and caring for patients by citing specific examples ostensibly derived from past experiences on the front-line. Examples of this participant focus included ‘...more day-to-day operational risks’ [C1-T1], like manual handling, transport, adverse events, clinical decision-making and medication errors:

*‘...patient safety is all different sorts of things from making sure you’re not giving the wrong medication to treat whatever they’re saying I suppose, down to making sure they don’t fall off the stretcher on the way out’ [C1-T2]*

*‘...it’s dealing with patients, getting to them in the fastest time possible, giving them the right drugs, identifying the problem accurately and giving the right drug, right treatment, get them to hospital quick as they need to go to hospital, identify when they don’t need to go to hospital, making sure they’re safe and that the right decisions were made.’ [C1-T3]*

Similar to executive and management-level participants, those from the operational level appeared to interpret patient safety within the context of their roles and day-to-day responsibilities, which for this group primarily involves treating patients face-to-face. However, while several participants from the management and executive-levels

differentiated the two interpretations as captured in the separate subdominant themes, *Systems Thinking* and *Direct Patient Care*, it was evident that the scope of patient safety was limited to treating patients for operational-level participants, as they did not consider any broader aspects of patient safety:

*‘...when I was thinking about patient safety for this interview, I didn’t really think about the wider aspects of it’ [C3-T2]*

While operational-level participants almost unanimously interpreted patient safety as relating to patient contact or harm as demonstrated above, a small number of participants representing the management and executive-levels shared a similar view, highlighting the divergence in the interpretation of patient safety as participants from these organisational levels contributed predominantly to the subdominant theme: *Systems Thinking*. Each of the management and executive-level participants who interpreted patient safety as relating solely to direct patient care had extensive experience as either a paramedic or a nurse and it was clear that while in management-level positions, that the day-to-day clinical operations of the NHS Ambulance Services were an aspect of their roles, as made evident in their responses.

#### 4.5 DOMINANT THEME TWO: SIGNIFICANT PATIENT SAFETY RISKS

**Significant Patient Safety Risks** > *Issues perceived as representing a significant risk to patient safety*

**Service Demand Pressures** > *Increasing patient demand is constraining resources and leading to delayed care for patients*

**Triaging** > *Triaging infrastructure and workforce are placing patients at risk of harm due to miscategorisation of calls*

**Lack of Training and Deskillling** > *Training opportunities are decreasing and staff are forgetting key information and skills as a result*

The second dominant theme, *Significant Patient Safety Risks*, characterises the perceptions of participants concerning patient safety risks, where there is significant potential for harm to patients in the NHS Ambulance Services. *Significant Patient Safety Risks* was formed after the three subdominant themes emerged and were identified from the responses of participants, including *Service Demand Pressures*, *Triaging* and a *Lack of Training and Deskillling*. A total of 43 participants explicitly referenced risks they perceived

as posing a significant danger to patient safety, where they often focussed on several different risks and how they were related, instead of a single risk in isolation. Participants appeared acutely aware of the interconnectivity of risks they discussed. For example, the current service demand pressures were seen as contributing to a wide range of other patient safety risks, including an increased strain on workforce and infrastructural resources, which was ultimately seen as delaying the ‘...*timeliness of care*’ [A2-T1].

Similar to the preceding dominant theme, *Varied Interpretation of Patient Safety*, while some risks to patient safety were referenced by participants across all three organisational levels and Ambulance Service NHS Trusts, such as *Service Demand Pressures*, others appeared to have a closer association with a certain organisational level or NHS Trust. The number of participants contributing to the dominant and subdominant themes according to each NHS Trust and organisational level is in the table below:

**Table 23: Participants Contributing to *Significant Patient Safety Risks***

		Executive			Management			Operational		
Dominant Themes	Subdominant Themes	T1 (*4)	T2 (*3)	T3 (*3)	T1 (*6)	T2 (*5)	T3 (*5)	T1 (*5)	T2 (*6)	T3 (*7)
Significant Patient Safety Risks	Service Demand Pressures	4	3	2	6	5	4	4	6	7
	Triaging	4	2	2	3	1	2	4	3	3
	Lack of Training and Deskillling	3	1	2	5	2	1	4	4	4

\*Number of Total Participants in Individual Categories (‘-’ denotes that zero participants contributed)

#### 4.5.1 Subdominant Theme: Service Demand Pressures

Over the last several years, the NHS Ambulance Services have experienced a ‘...*massive increase in the number of 999 calls*’ [B3-T1] that they receive, which has resulted in an increasing amount of operational pressure and stress placed on their current resources by a growing number of patients. It was clear that participants across all three organisational levels and NHS Trusts were aware of this rise and were concerned about the impact that the service demand pressures ultimately have on patient safety:

‘...*high demand by the very nature of it, puts patient safety at risk*’ [A4-T1]



*‘...the whole pressure we are under now, I think that’s a massive...massive...massive impact on patient safety’ [C3-T1]*

While a majority of participants at the executive and management-levels did not speculate as to its cause, operational-level participants often emphasised how the increase in service demand pressures was predominantly fueled by non-emergency patient use. Operational-level participants routinely came across as irritated and dejected when discussing this patient group and defined non-emergency as not requiring an emergency ambulance response, which included frequent callers, all of whom were believed to *‘...add to the demand quite a bit’* [C1-T2], thereby taking resources away from other patients who needed immediate care:

*‘...the general public put patients at risk because they’re not willing to take care of themselves and leave an ambulance free for those more serious cases.’ [C5-T1]*

Beyond voicing possible reasons for the rise in service demand pressures, participants predominantly emphasised the patient safety risks presented by the mismatch of demand and available resources, where the NHS Ambulance Services have a diminishing level of resources available to deal with the gradually increasing number of patients calling 999. Participants reported that the service demand pressures had placed a substantial and increasing strain on the available number of workforce and infrastructural resources, including paramedics, equipment and vehicles, and that the NHS Ambulance Services now do not have enough resources available to adequately and safely meet the rising demand by patients:

*‘...the mismatch of resources to demand, we haven’t got safe staffing levels’ [A2-T2]*

*‘...we don’t have enough equipment or medication or bodies or ambulances, et cetera, to deal with the number of calls coming in nowadays.’ [C4-T2]*

In addition to lacking a sufficient number of resources, the current service demand pressures were also seen as exacerbating the risk for errors related to human factors, such as fatigue. Participants cited how paramedics and other operational-level staff have a growing workload which *‘...produces a climate for error’* [B3-T2], as staff are increasingly tired and therefore more prone to making mistakes while caring for patients:

*'As far as demand goes, people are more tired, so mistakes will happen. We're doing twelve-hour nights with no time in between jobs, and it naturally leads to a higher risk for patients.'* [C5-T2]

As the NHS Ambulance Services become busier with a widening mismatch between service demand and available resources, participants commented on how this has ultimately resulted in *'...delays in getting to patients and patients waiting a long time'* [A1-T1], where they are increasingly unable to respond to patients in a timely manner, thus having a significantly negative impact on patient safety:

*'It's supposed to be half an hour, and when it gets to be two or three hours and more, then that crew isn't on the road, and if a patient is waiting for an ambulance, patient safety is compromised'* [A3-T2]

*'...sometimes you've only a certain amount of crews, and you're not going to be able to get to some patients for several hours'* [C1-T2]

Participants typically referenced a lack of available resources due to demand, as they have *'...limited resources to respond to patients'* [B6-T1], as well as an increasing number of patients requiring handovers at hospitals, resulting in delays lasting several hours dependent on their condition, where patients have to wait alongside operational staff without adequate care. Situations, where operational staff were waiting to hand over patients at hospital, presented a particular risk for patient safety, as participants often discussed how an ambulance could be unavailable and waiting at an A&E department for several hours, resulting in other patients not receiving a timely response and increasing the risk of a patient's condition degenerating:

*'...it can be a number of hours, sometimes, our crews are delayed in hospitals, and then in that time, that patient is potentially deteriorating'* [B3-T1]

A total of 41 participants discussed the service demand pressures currently facing the NHS Ambulance Services and the risks that they present to patient safety, suggesting that the implications of which are felt by staff at all organisational levels. No participants were optimistic about the rate of demand slowing, and many suggested that the NHS Ambulance Services would either need to invest financially to increase their available workforce and infrastructural resources or allocate care more efficiently through triaging; the latter of which was perceived as representing a separate significant patient safety risk.

#### 4.5.2 Subdominant theme: Triage

It was clear from the responses of participants that triaging, or the process of prioritising and allocating care for patients, was perceived as having a significant impact on patient safety and that ‘...*inadequate triaging*’ [C4-T2] presented a significant patient safety risk.

*‘...patient safety I believe has become very unsafe in the way that we’re handling emergency calls’ [C1-T3]*

A total of 24 participants felt that infrastructural and workforce resources relating to triaging, including the inadequacies of the NHS Pathways system used by the NHS Ambulance Services and the lack of clinical knowledge by staff in the emergency operations centre (EOC) that would account for the inadequacies of the system, posed substantial risks to patient safety.

It was frequently mentioned by participants that the triaging system used by the NHS Ambulance Services, NHS Pathways, was severely flawed and represented a substantial risk to patient safety. Participants primarily cited the rigidity of the categorisation algorithm, which they perceived as prioritising and allocating resources to patients in an unsafe way:

*‘...the categorisation system which categorises calls...leaves like elderly fallers as a low category, so it leaves vulnerable people on the floor for quite a long time’ [C3-T3]*

*‘...we go out to a call with a twisted ankle, while we’ve got some 90-year old on the floor, you know, and we question it and say “well, that’s the system”, and it’s always like it’s rigid when they phone up, they answer questions and it gets blocked into a system’ [C6-T2]*

Participants noted how NHS Pathways was developed with a one-size-fits-all approach to handle millions of calls a year in a standardised way, and that it was very good at identifying patients in critical conditions, such as those suffering from a stroke or heart attack. However, NHS Pathways was also criticised by participants as unable to adequately diagnose and triage patients presenting with more nuanced and less evident conditions that may be recognised by a clinician:

*‘It’s not a clinical assessment system, but a crude, rapid triage system to identify the big sick. So it’s very good at identifying the big sick and the not sick, it’s the ones in the middle that worry me’ [A2-T3]*

While participants expressed how the triaging system was unsafe due to aspects of its stringent nature and perceived inflexibility, they also acknowledged that it was necessary as EOC staff lack the clinical knowledge required to triage patient care safely, representing a significant risk to patient safety. EOC staff are not required to have any medical knowledge before starting their role and participants felt that this limited their ability to safely identify and triage patients at the highest clinical risk:

*‘...they’ll come from just a call centre background, or from a completely different background, onto the training course, and I think to have that clinical input early on could quite often prevent a paramedic response being sent to someone...it inhibits our sort of, our ability to respond to life-threatening conditions’ [B3-T1]*

A chief concern of participants was that EOC staff lack both clinical knowledge and autonomy to account for the faults in the triaging system, therefore putting patient safety at risk. Due to their lack of clinical expertise, participants reported that EOC staff would be unaware of when they should change the categorisation of a call, or *‘...prioritise their call into a good, safe category’ [B5-T1]* if the system was incorrect or potentially diverting resources away from needier patients, and participants felt that this led to many calls which were improperly coded:

*‘...we go to a lot of things which are coded, in which when we actually arrive on scene, they’re basically miscoded’ [C4-T2]*

*‘...it’s hard for us because we’re not clinically trained, we have to use the system, and sometimes the system fails us’ [B6-T1]*

Participants expressed how patients would be much safer and less at risk if the NHS Ambulance Services were to *‘Hire some more clinicians on dispatch’ [C3-T1]*, as resources would be allocated more efficiently and effectively to patients who require it most and they would no longer be entirely reliant on the triaging system, the faults of which are demonstrated above.

*‘...put more clinicians in the control rooms to help the control staff identify those at greatest clinical risk so we can try to get the best resource to the right person at the right time’ [A1-T1]*

*‘...we need to invest in a lot more clinicians in the clinical hub. Whether that affects patient safety directly, is another matter. It’s probably more about patient*

*experience than safety, but it all helps makes the system more efficient, and so therefore by default, it'll improve patient safety' [A1-T2]*

Within this subdominant theme, *Triaging*, participants represented all three Ambulance Service NHS Trusts and organisational levels, and no significant differences were evident. However, while the small number of participants from the EOC in this study expressed that the triaging system posed a substantial risk to patients, none suggested that their lack of clinical knowledge was also a risk.

#### **4.5.3 Subdominant theme: Lack of Training and Deskillling**

A total of 26 participants, predominantly at the management and operational-levels, routinely referenced a glaring absence of training offered to staff on the front-line of the NHS Ambulance Services. The amount of available training was perceived as '*...gradually being cut down*' [B3-T1], and it was evident that participants shared a considerable concern for the '*...lack of training*' [C2-T2] that was currently available for staff:

*'...our staff really do miss that opportunity for training, because it's not given to them' [B5-T1]*

*'...you might put a lovely bit of new kit in, or you might get a new vehicle, and you'd imagine that everyone would get training on that, but that doesn't always happen, and sometimes it's just there one day and somebody's like: "does anybody know how to use this bit of kit?", that sounds bad, doesn't it?' [B5-T2]*

Participants emphasised that the substantial lack of training offered to front-line staff in the NHS Ambulance Services represented a significant patient safety risk, as staff are then more vulnerable to not having, or losing, clinical knowledge and skills, commonly referred to as deskillling, which can ultimately lead to human error and ultimately patient harm:

*'...if we didn't maintain our knowledge, there would be more clinical incidents.'*  
[C5-T1]

*'...when you look at things that have gone wrong, it's human errors associated with training, or with them not knowing something, or a lapse' [B5-T2]*

Participants emphasised that over time, the clinical knowledge and skill sets of front-line staff have a natural tendency to decline. Without a consistent method of updating these

skills, participants noted that they might not remember how to carry out a clinical procedure accurately and safely, or have not stayed current with the latest clinical practice updates, and therefore ‘...*might be practising in an out of date manner*’ [B2-T2], putting patients at risk of harm. While the deskilling of front-line staff could somewhat be attributed to a ‘...*lack of exposure to a variety of conditions on a consistent basis*’ [C4-T3], participants reported that it occurred primarily due to the substantial lack of available training offered to staff in the NHS Ambulance Services:

*‘...there’s an element of deskilling going on and those staff going out probably aren’t as well trained as they should be...so the care that’s going to come out of that is probably not going to be as safe or as consistent as I would like it’* [C1-T1]

As deskilling and the lack of training were viewed as significant patient safety risks, participants would often suggest that the frequency of training needed to increase. However, while advocating for additional training, a majority of participants noted that it was unlikely and would require significant financial investment to implement to free up time for operational staff. While participants at the management and operational-levels discussed the lack of training and deskilling of staff representing a risk to patient safety, it was apparent that those from the executive level either did not share these same concerns or chose not to discuss them as frequently.

#### 4.6 DOMINANT THEME THREE: REPORTING CULTURE SHIFT

**Reporting Culture Shift** > *Patient safety reporting has improved radically due to increased emphasis on reporting, a more supportive culture and the introduction of robust reporting infrastructure*

**Historically Inadequate** > *Previously poor patient safety reporting attributed to blame culture, a lack of reporting infrastructure and a lack of emphasis by management*

**Getting Better** > *Improvements in patient safety reporting attributed to a more supportive culture, the Datix system, as well as NHS Trust communication and guidance*

The third dominant theme, *Reporting Culture Shift*, reflects a perceived shift towards a more positive reporting culture within the NHS Ambulance Services and emerged after the two subdominant themes, *Historically Inadequate* and *Getting Better*, were identified. All 44 participants contributed to this dominant theme, discussing their perception of the reporting culture in its present state, as well as how it was perceived in the past within the NHS

Ambulance Services. It was evident from their responses that the historic reporting culture was believed to be poor and based on the attribution of blame and punitive consequences, that no framework or system was in place to facilitate reporting and that the rate of reporting incidents was exceedingly low. In contrast, participants expressed how the modern reporting culture, or how it existed currently within their organisations, had moved away from its previous negative state and evolved into a more open and proactive culture, where staff felt comfortable reporting incidents without fear of punishment or blame, as embodied in the quote below:

*'...that shift from people not saying when they've made mistakes, to now with people being more willing to report mistakes with themselves or others. It is enormous; over the last ten years I've seen a really big change' [C1-T1]*

The following section characterises and presents the findings from the subdominant themes of *Historically Inadequate* and *Getting Better*, which then together comprise the overarching dominant theme: *Reporting Culture Shift*. The table below details the number of participants who contributed to this theme across each organisational level and Ambulance Service NHS Trust.

**Table 24: Participants Contributing to *Reporting Culture Shift***

		Executive			Management			Operational		
Dominant Themes	Subdominant Themes	T1 (*4)	T2 (*3)	T3 (*3)	T1 (*6)	T2 (*5)	T3 (*5)	T1 (*5)	T2 (*6)	T3 (*7)
Reporting Culture Shift	Historically Inadequate	2	2	3	3	3	5	4	4	3
	Getting Better	4	3	3	5	4	5	5	5	7

\*Number of Total Participants in Individual Categories ('-' denotes that zero participants contributed)

#### 4.6.1 Subdominant Theme: Historically Inadequate

A total of 29 participants discussed the reporting culture in the NHS Ambulance Services from a historical perspective, where it was evident that they viewed it as largely inadequate, or worse than it is in its modern state. Participants commented that *'...historically, the ambulance services had a very low level of reporting'* [A1-T3], where staff would not report incidents due to a convergence of several issues, including a fear of blame and punishment,

a lack of organisational support encouraging reporting and an absence of a system which would have facilitated the reporting process:

*'...if a clinician maybe made an error or admission, there wasn't a robust reporting process, and they felt that if they did raise a concern, that maybe they wouldn't be treated fairly, or that they would be disciplined for making an error'* [B4-T3]

Participants particularly emphasised the former existence of a blame culture in the NHS Ambulance Services, where *'...there was a perception that if you came forward having made a mistake, you'd get punished for it'* [A1-T3], resulting in staff not feeling comfortable reporting incidents because of an expectation of punishment or mistreatment by their organisation:

*'...the culture that exists historically in the [OMITTED - NHS Trust T3] is that you're always being watched and you're always being monitored, and there's a big big blame culture'* [A3-T3]

*'Historically, the ambulance service has had a culture of blame'* [C4-T1]

When describing the historic blame culture, participants frequently cited hearing stories of instances in the past where *'...people had some really bad experiences'* [C3-T3] with punishment in their organisations following the reporting of an incident, which would commonly lead to disciplinary proceedings and was perceived as resulting in fewer incidents being reported by staff:

*'If you made a clinical mistake, you wouldn't speak about it for fear of being punished'* [A3-T1]

*'...people hid their mistakes because it was the only sensible thing to do'* [C4-T1]

Beyond withholding mistakes or errors for fear of punishment, participants also reported that historically, the negative impact of the existing blame culture was compounded by an absence of organisational support which would encourage reporting, as *'...historically, it wasn't encouraged as it is today'* [C7-T3], and staff were not expected to report patient safety issues:

*'You weren't always encouraged to come forward with issues'* [C2-T2]



Even if staff felt supported and encouraged to report incidents by their organisations in the past, participants expressed that the NHS Ambulance Services did not previously have a robust reporting system or mechanism where front-line staff could voice and register their concerns:

*'We have a system in place which we didn't have before...In fact in 2013, when I came in, there was nothing there, it was awful'* [B5-T3]

*'...thirty years ago, you wouldn't have had any reporting system or step-by-step process to follow'* [B1-T2]

The designation of a historical reporting culture can give the impression of occurring in the distant past; however, many participants stated that no adequate reporting system or organisational support had existed until as recently as 2015, indicating that these issues have been perceived as relatively recent. While participants expressed that the reporting culture in the past had been poor as evidenced in this subdominant theme, they also said that the current reporting culture in NHS Ambulance Services was in the process of undergoing developments and improvements addressing these issues, all of which will be discussed in the subsequent subdominant theme: *Getting Better*.

#### **4.6.2 Subdominant Theme: Getting Better**

While a total of 29 participants described the historical reporting culture as poor, as demonstrated above, all 44 participants discussed the reporting culture as it exists currently in the NHS Ambulance Services, where they almost unanimously expressed that it had *'...definitely taken a positive turn'* [B4-T3] and had improved from its former state:

*'...over the past three years working here, I would say the reporting culture has improved.'* [B4-T2]

*'I do think it is a lot better; I've seen like a massive change, and like I've seen people reporting things that people in the past would have gone unreported'*  
[C3-T3]

Participants perceived that the reporting culture within their organisations had improved due to a combination of several factors, including a targeted elimination of blame culture through encouraging and empowering staff to report patient safety incidents, as well as the

implementation of a robust reporting system, ultimately leading to an increasing number of events being reported.

The recent transition to an open reporting culture free of blame was noted by participants, who acknowledged that while elements of a blame culture may still exist in the organisation, that the NHS Ambulance Services are either in the process of moving away from or have almost eliminated blame culture:

*'...those days of blame culture are pretty much gone, and I think there is a general sense of fairness.'* [A4-T1]

*'I think there is a shift in culture away from people not wanting to report stuff because they're scared of being blamed.'* [C2-T3]

According to participants, the existence of a culture of blame has been minimised within the NHS Ambulance Services as they have recently '*...done a lot of work around a no-blame culture*' [B1-T1], where '*...people in the higher positions have been more supportive of staff*' [B2-T2] by encouraging reporting and emphasising that front-line staff will not be blamed or punished for reporting patient safety incidents:

*'...we go through the supportive route rather than the disciplinary route, so I would say we're quite forward-thinking in that respect'* [A3-T1]

*'...the reporting culture over here is in no longer about blame. People are in no way fearful of reporting incidents. I think that staff are encouraged to report incidents and supported when they do'* [C7-T3]

In addition to improving reporting culture by supporting and encouraging the reporting by front-line staff, participants also perceived that '*...the reporting systems are a lot better these days*' [B1-T3], and that reporting culture was improved after the introduction of the robust online reporting system: Datix®.

*'...we're using Datix®, which certainly started to raise the profile of safety and incident management across the organisation.'* [B4-T3]

According to participants, the replacement of reporting incidents using paper-based forms with Datix® helped increase the accessibility and the '*...means to report all of these incidents*' [C7-T3], resulting in a significant rise in reporting, that may be attributable to more efficient data capture:

*‘...what we’ve seen is in 2013 we launched Datix® reporting system, and we have seen reporting go up quite a lot’ [B5-T2]*

*‘When we went over to a web-version of reporting, it increased our reporting by 40 percent.’ [B2-T1]*

As demonstrated in the subdominant theme, *Getting Better*, participants across all three organisational levels and NHS Trusts perceived that the current reporting culture in the NHS Ambulance Services had improved from its former state by addressing the prominent issues discussed in *Historically Negative*. Although participants described improvements in the state of the reporting culture, many emphasised that the improvements were ongoing and that it will take additional effort and time to continue progressing towards an open and just culture.

#### **4.7 DOMINANT THEME FOUR: COMMUNICATION**

**Communication** > *Impact staff communication has on patient safety through infrastructural and workforce resources*

**Infrastructural Resources** > *Technology is outdated and unfit for mobile and remote staff who have specific communication preferences*

**Workforce Resources** > *Staff are too busy to read the communication and are isolated from other staff and headquarters*

The penultimate dominant theme, *Communication*, captured the perceptions of participants concerning communication and its relationship with patient safety in the NHS Ambulance Services and was established following the identification of the two subdominant themes, *Infrastructural Resources* and *Workforce Resources*. All 44 participants discussed communication between staff in the NHS Ambulance Services and its association with patient safety, where participants reported that it had a significant impact:

*‘...communication in that respect is paramount for patient safety’ [B3-T1]*

*‘...the biggest thing we can do to improve patient safety is to try to figure out how we can communicate well with everybody and how we can disseminate information well with everybody.’ [B2-T2]*

While describing the relationship between communication and patient safety, participants raised several communication issues related to infrastructure resources, as well as workforce resources, which both incorporated a variety of different aspects. Participants referenced problems presented by information technology (IT), the multiple channels of communication, operational pressures and the mobile workforce, which will be expanded on within each subdominant theme. The table below highlights the representation by participants across the three Ambulance Service NHS Trusts and organisational levels within each subdominant theme.

**Table 25: Participants Contributing to *Communication***

		Executive			Management			Operational		
Dominant Themes	Subdominant Themes	T1 (*4)	T2 (*3)	T3 (*3)	T1 (*6)	T2 (*5)	T3 (*5)	T1 (*5)	T2 (*6)	T3 (*7)
Communication	Infrastructural Resources	4	3	3	5	5	5	3	5	6
	Workforce Resources	4	2	2	5	3	3	4	5	4

\*Number of Total Participants in Individual Categories ('-' denotes that zero participants contributed)

#### 4.7.1 Subdominant Theme: Infrastructural Resources

Participants discussed communication issues relating to infrastructural resources, or the physical, organisational structures and facilities present within the NHS Ambulance Services, which facilitate staff communication around patient safety-related information. In particular, participants were concerned with the ineffective and inconsistent use of multiple channels of communication, as well as the ill-equipped IT infrastructure, both of which were perceived as having a substantial negative impact on patient safety.

Several channels of communication exist within the NHS Ambulance Services to disseminate patient safety-related information, including email, posters on notice boards, bulletins, and NHS Trust social media pages. While several channels are available to staff, participants considered the current communication strategy inefficient and ineffective as they perceived that their Ambulance Service NHS Trusts do not utilise these infrastructural resources effectively. Participants reported that messages relating to patient safety were often delivered via one channel of communication, rather than multiple channels, and therefore did not reach all staff:

*‘...publishing it on paper doesn’t hit everybody, publishing it electronically doesn’t hit everybody. So it’s a bit of a stumbling block about getting the information out about what’s safe and what’s unsafe, what works and what doesn’t work’ [B2-T2]*

The concern was that while the infrastructure exists to communicate with staff and ‘...the channels are there’ [A3-T1], individual staff would not always receive patient safety communication and update their knowledge and practice accordingly, thereby increasing the risks to patient safety. Operational participants confirmed that a reliance on one channel of communication was ineffective to reach all front-line staff, often sharing examples of colleagues who would not use specific channels of communication:

*‘...some of my colleagues have no interest in reading reports or posters or magazines.’ [C2-T3]*

*‘I know there’s some people that don’t really ever check their emails’ [C6-T3]*

While participants identified the issues presented by relying on one channel of communication as evidenced above, they also commented on ways to overcome these infrastructural limitations. Unsurprisingly, participants advocated a multifaceted approach to disseminating communication, involving a more efficient use of the existing infrastructure by sharing patient safety-related information over multiple channels, thereby maximising the number of staff reached:

*‘...no one individual way of getting that information out reaches everybody, and you’ve got to do a blanket across all different options’ [B1-T2]*

Beyond the infrastructural issues presented by the ineffective use of the multiple channels of communication, participants also reported that the inadequate state of IT within the NHS Ambulance Services negatively impacted the communication of patient safety-related information. Participants regularly commented that the IT infrastructure was outdated and did not presently meet their communication needs, which they viewed as ultimately inhibiting the communication between staff:

*‘...communication-wise, we are way back in the ‘80s’ [B6-T1]*

*‘...we are digitally immature, we don’t have a really good infrastructure to utilise modern technology’ [A3-T1]*

According to participants, the availability of modern IT infrastructure in the NHS Ambulance Services as a whole was patchy, and many participants discussed how their organisation had not adopted advanced technology to enhance communication and instead relied on older hardware:

*'We don't even have smartphones on ambulances, let alone...well, we have a laptop, but it's so clunky and archaic, that in itself is a barrier.'* [B4-T2]

While the availability of modern IT infrastructure varied depending on the individual Ambulance Service NHS Trust, as one NHS Trust had recently distributed iPads to all members of staff, the inefficient use of technology was universal across the NHS Ambulance Services. Participants felt that the *'...IT infrastructure really isn't fit for purpose'* [B4-T2], where staff could not access emails outside of work hours, that the Internet they use does not hold some digital content like video, and that the services *'...don't provide telephones, so we rely on staff's goodwill to use their own'* [B4-T2]. Issues like these were perceived as affecting knowledge transfer around patient safety-related information, as well as not meeting the needs of the NHS Ambulance Services, thereby presenting significant barriers to communication:

*'...we don't use our IT functionality as much as we should do'* [B4-T1]

*'[OMITTED - NHS Trust T3] has issued 10,000 iPads or whatever it is, and I'm still having to handwrite a 200 to 300-word essay...for every single patient that I do.'* [C7-T3]

While the IT Infrastructure was viewed as outdated and unsuitable for the NHS Ambulance Services, participants routinely expressed an awareness of potential and available technological solutions to improve communication. However, participants, predominantly from the management and operational levels, perceived that this was not a priority for the services:

*'IT infrastructure is expensive, and money is a finite resource. Our priorities, in this organisation, are elsewhere'* [B4-T2]

Participants discussed how communication around information related to patient safety could be improved by technologising, or incorporating modern digital technology, into their

respective NHS Trusts. Participants reported that a modern approach to technology would result in an improvement to patient safety:

*‘...if we can better digitalise the system, I think not only would it be a good way of communicating with our staff, but it will also help us help patients better’ [A1-T1]*

Participants raised various technology-based solutions to improve communication, and a particular focus of management and executive-level participants was in utilising technology to facilitate communication with front-line staff members while they are in their vehicles to address the issues presented by a mobile workforce:

*‘...we want to be able to communicate with them whilst they are in the vehicles.’ [A3-T1]*

To increase the accessibility of communicated information and to reach staff while they are operating in isolated environments away from a station, management and executive-level participants suggested providing or using smartphones or tablets which front-line staff have as part of their kit. This perception was illustrated in the following quote by an executive working in a role related to communication:

*‘...one piece of kit that people carry around with them at all times is their personal mobile phone devices. So I would have sought consent from staff to start pushing out messages on people’s personal mobile phone devices with the option to switch off when they’re not on shift.’ [A3-T3]*

Participants observed how providing front-line staff with suitable electronic devices would also enable the NHS Ambulance Services to institute and monitor a system of read-receipts, where they would be able to establish which members of staff read specific pieces of communication:

*‘...if I push out an updated policy or a bulletin, the staff get a notification of it, and they have to electronically sign to say that they’ve read it and understood it, and then I have the back end of the system tell me who has and hasn’t done it’ [B2-T3]*

Similar to the executive and management-level participants, those from the operational-level suggested various approaches to technologising the services to improve communication. However, although operational-level participants also proposed the use of tablets and mobile phones, none suggested the implementation of read-receipts, which was

a focus of a majority of the other organisational levels. Instead, a majority from the operational level instead chose to concentrate on things that they use in their clinical practice, including the streamlining of work websites, making patient report forms (PRFs) electronic and having an app on their devices where they could access evidence-based practice (EBP), routine information bulletins (RIBs) and other NHS Trust information while away from the station:

*'...what would be really really good if they could do it, is have an app, like a [NHS Trust T3] app that you can go on while you're actually on shift and you've got a quiet five minutes, you can go, and you can look through the RIB' [C5-T3]*

*'...from a patient safety perspective, having things like the clinical apps and things now because they can search those very quickly and easily, and they're continually updated so they can feel like they have the most up to date information' [B3-T2]*

While participants representing all three Ambulance Service NHS Trusts referenced how the inefficient use of infrastructural resources negatively impacted the communication of patient safety-related information, differences emerged across organisational levels when discussing the IT infrastructure. It was evident that participants from NHS Trust T3 discussed IT infrastructure more frequently than those from NHS Trusts T1 and T2. In particular, a majority of the operational-level participants who contributed were from NHS Trust T3, all of whom represented a younger generation which grew up during the recent and fast-paced technological advancements, including the emergence of smartphones and tablets.

#### **4.7.2 Subdominant Theme: Workforce Resources**

Participants were not only concerned with infrastructural resources representing a barrier to effective lines of communication around patient safety within the NHS Ambulance Services, as they repeatedly discussed issues relating to workforce resources as well, referencing the communication problems introduced by the operational pressures they work under and the dispersed and mobile workforce.

Participants commented on the mobile nature of the clinical workforce in the NHS Ambulance Services, often referencing the expansive geographical regions across England



that their NHS Trusts cover, as well as the challenges it presents to disseminating communication:

*‘...the biggest challenge that we have is disseminating information out to people’*  
[B2-T2]

Participants saw communication within the NHS Ambulance Services as *‘...much more challenging than in an acute hospital’* [B5-T2], where you have a contained workforce. The mobile and dispersed working patterns of paramedics was perceived by participants as representing a barrier to effective lines of communication around patient safety-related information. In particular, participants emphasised that paramedics *‘...never return to ambulance stations’* [A2-T3], nor come into regular physical contact with other staff, where they could be updated on clinical procedures or initiatives, as well as raise any patient safety concerns:

*‘...clinicians don’t get to sit down in a mess room together, and they never get to see each other from one start of their shift to the end, so there’s no real opportunity for people to bounce problems or concerns off each other’* [B3-T2]

*‘...it’s difficult for them to just pass information down because we don’t ever see any management’* [C3-T3]

While participants discussed the communication problems presented by the mobile workforce in the NHS Ambulance Services, they also centred on potential solutions, predominantly reporting that *‘...there needs to be more face-to-face communication’* [B5-T3]. However, participants acknowledged the challenges and limited feasibility of face-to-face communication, and instead focussed on the need for better infrastructural resources, such as implementing the IT and technological solutions as identified in the previous subdominant theme, like providing staff with mobile phones or tablets to reach them in their ambulances or at the site of an emergency.

Beyond the workforce issues introduced by the mobile and spread-out nature of the operational staff, as covered above, participants also reported that operational pressures, which paramedics and other clinical staff work under, negatively affect communication in the NHS Ambulance Services. Participants, predominantly from the management and operational levels, indicated that a significant barrier to successfully disseminating patient

safety information was that front-line staff had limited to no available time to read what they are sent due to the operational pressures they are working under:

*‘...the amount of time the front-line staff have to digest internal communication is very very finite’ [A3-T3]*

Due to the substantial and increasing service demand pressures, operational-level staff have limited to no time between jobs, and as soon as one job is ‘cleared’, or completed, they are sent to the next one, substantially limiting the time they have to access their messages:

*‘...because we are rushed off our feet, we literally arrive at station, and five minutes later we’re out on a job, so we don’t really get to see it.’ [C5-T3]*

*‘They come in, they’ve got to get on their box, and they’ve got to ride around for 12-hours. There’s no time to read.’ [B5-T3]*

As there is an insufficient amount of time during shifts to access and digest internal communication from their Ambulance Service NHS Trusts, participants reported that there was an expectation that they would read it within their personal time outside of work hours, which was noted as improbable and unfair:

*‘...we don’t go home and then go on our computer and read the RIB and read about the latest CQC bulletin because I’m not being funny, but that’s pretty unrealistic, especially when you’re just ground staff.’ [C5-T3]*

Similar to the communication issues presented by the mobile workforce, the lack of time from operational pressures resulted in information and messages, such as trust initiatives, patient information or clinical practice guideline updates, for example, which were never accessed or read by clinical staff. Beyond allocating a fixed time where staff can read and catch up on communication, or drastically reducing the level of demand by service users, both which participants noted would be unlikely, participants described how infrastructural resources and IT could be used to address these issues. As discussed within the *Infrastructural Resources* subdominant theme, participants suggested that increasing the accessibility of this information through technology by providing staff with mobile phones or tablets, where it could be read anywhere at any time, would have a positive impact on patient safety.

## 4.8 DOMINANT THEME FIVE: ORGANISATIONAL CULTURE

**Organisational Culture** > *Impact of historical remnants from the past organisational culture on patient safety and how the services can become a learning organisation to improve patient safety*

**Organisational and Cultural Legacy** > *Historical remnants from past organisational culture, including a hierarchy, lack of support and understanding, as well as a performance culture, remain within the services and have a continued impact on patient safety*

**Becoming a Learning Organisation** > *Solutions to erase or minimise the past historical remnants to become a learning organisation and have a positive impact on patient safety as a result*

The final dominant theme, *Organisational Culture*, captured and characterised the perceptions of participants concerning organisational culture within the NHS Ambulance Services and its connection to patient safety. This theme emerged after the two subdominant themes, *Organisational and Cultural Legacy* and *Becoming a Learning Organisation*, were established. Each of the 44 participants contributed to this theme, where they discussed the historic cultural remnants of the past, including the focus on time targets, aversion to risk and hierarchical structure, and how these remain present within the services today and continue to have a significant impact on patient safety. Participants also expressed how the organisational culture could shift away from the historical remnants of the organisational and cultural legacy and provided the pathways to improve. Suggestions by participants primarily concerned including developing a learning culture with continued education and training for all staff, focussing on leadership at every level and opening the infrastructure across organisational levels. While participants perceived that reporting culture had shifted quite quickly and recently, as demonstrated in the third dominant theme, *Reporting Culture Shift*, participants emphasised how improving organisational culture overall to have a positive impact on patient safety would take much longer:

*'It's evolved over a long slow process.'* [A3-T1]

*'...it's just something that would take time to completely shift it'* [B5-T3]

The table below illustrates the number of participants who contributed to each of the two subdominant themes, *Organisational and Cultural Legacy* and *Becoming a Learning Organisation*, per organisational level and Ambulance Service NHS Trust, which together form the broader dominant theme, *Organisational Culture*.

**Table 26: Participants Contributing to *Organisational Culture***

		Executive			Management			Operational		
Dominant Themes	Subdominant Themes	T1 (*4)	T2 (*3)	T3 (*3)	T1 (*6)	T2 (*5)	T3 (*5)	T1 (*5)	T2 (*6)	T3 (*7)
Organisational Culture	Organisational and Cultural Legacy	3	2	3	6	5	3	5	6	6
	Becoming a Learning Organisation	4	3	3	6	5	5	5	6	7

\*Number of Total Participants in Individual Categories ('-' denotes that zero participants contributed)

#### 4.8.1 Subdominant Theme: Organisational and Cultural Legacy

A total of 39 participants, representing all three organisational levels and Ambulance Service NHS Trusts, commented on an organisational and cultural legacy within the NHS Ambulance Services, where they are still dealing with persisting harmful elements from the past organisational culture. The historical remnants of the past organisational culture raised by participants centred primarily on when the NHS Ambulance Services were viewed '*...as an emergency service rather than a health service*' [B1-T1], where the focus was on meeting response time targets, the paramedic role was risk-averse and there was an entrenched command and control hierarchical structure which lacked openness and support. Participants perceived these historic cultural remnants, representing past perceptions, behaviours and values, as still present within the NHS Ambulance Services, thus presenting a '*...barrier to changing cultures and behaviour and practice*' [B5-T3]:

*'...it's the entrenched, embedded culture that's been difficult to change'* [A1-T2]

*'...there's barriers that have been put up years ago that you'll still be kind of dealing with and helping to remove'* [B5-T2]

In particular, participants discussed the command and control nature prominent in the early NHS Ambulance Services, including the established hierarchical structure of staff, where uniforms and pips, or rank markings, designated their rank, resulting in an organisation that '*...wasn't very open*' [A3-T3]:

*'...we had a very regimented, command and control organisation. In some respects it was a bit like the military, everyone was in uniform all the time, it was very much a rank culture' [A1-T3]*

As a result of this *'...uniformed, hierarchical service'* [B2-T1], participants felt that it ultimately led to a *'...big "us and them", sort of rift'* [B4-T1], where staff did not interact with those from other organisational levels, resulting in a divergence of perceptions and culture across the entire organisation, as well as a lack of openness and support:

*'...senior leadership don't necessarily feel that what we do on the road...has anything to do with them, that there's this big divide between us, and that we don't understand their challenges' [B3-T3]*

While participants discussed the command and control hierarchical structure in the NHS Ambulance Services in a historical context, it was apparent that some also felt that it continued to be *'...very much ingrained in the organisation'* [B4-T3] and that this entrenched organisational and cultural legacy remained a dominant characteristic of the services:

*'...it's very much a command and control, so it's a very hierarchical type of environment that you work in' [B5-T1]*

According to participants, in addition to the lingering organisational and cultural legacy of the evident hierarchy, historically, the NHS Ambulance Services have been predominantly focussed on *'...whether you hit your response times or not'* [A1-T3], involving getting to patients in a specific amount of time, as their performance as an organisation has been measured against these metrics:

*'...historically, trying to meet the time targets has led us to neglecting some of our patients' [B3-T1]*

While a prominent feature of the past, it was evident that participants perceived that this organisational and cultural legacy has had a lasting impact and remained prevalent within the modern NHS Ambulance Services, as they frequently referenced the response time targets they currently operate under:

*'...you have the performance culture and performance being "how quickly can we get there?", that culture exists.' [A4-T1]*

*‘...we are under strict time protocols, and that’s something that really becomes prevalent’ [C5-T3]*

When asked to clarify how a focus on response time targets was related to the safety of patients and how it impacted the organisational culture, participants reported that *‘...as soon as there is a real focus on operational performance, everything else gets dropped’ [B2-T1]*, where anything related to patient safety would be set aside during that time:

*‘...that target of that delivery of that seven minutes, eight, 19 minutes, half an hour, 40 minutes for all those categories, is putting a pressure on everything that stops some of the safety things happening’ [B5-T2]*

*‘...performance measures and the way that we are both financially paid and performance managed, isn’t always in accordance with the safest patient care’ [A1-T1]*

Beyond the entrenched prioritisation of performance targets, participants often commented on the *‘...very risk-averse’ [C2-T3]* nature of the early NHS Ambulance Services, where all patients were taken directly to the hospital, regardless of their condition, and paramedics had little clinical input:

*‘...you just turn up, pop them onto a trolley bed, and then just wheel them off to the nearest ED, you know, that’s the old historic model of what an ambulance service was.’ [A1-T3]*

Participants reported that existing elements of the organisational and cultural legacy of risk aversion remain strongly evident and that there is still a prevalent *‘...culture of being risk-averse’ [B4-T2]*. Participants, predominantly at the operational-level, perceived that some staff continue to convey every patient to hospital, regardless of what is seen as best for the patient and their safety:

*‘...they’re very risk-averse, [OMITTED - NHS Trust T2], they’d rather do something to minimise the risk, even if it’s not always the best thing’ [C2-T2]*

*‘...they think it’s just easier to put them in the ambulance and take them to hospital, where it’ll be somebody else’s job, even though we know that that’s probably not the right thing to do’ [C6-T2]*

While participants from all three NHS Trusts discussed the existing organisational and cultural legacy within the NHS Ambulance Services and how the historical remnants of risk

aversion, the prioritisation of time targets and a command and control hierarchical structure continued to have an impact on the organisational culture today, significant differences emerged across the organisational levels of participants. Although participants from all organisational levels discussed the hierarchical structure prominent within the NHS Ambulance Services, it was evident that executive-level participants emphasised response time targets more frequently, while operational-level participants were more focussed on being risk-averse than the other two levels.

#### **4.8.2 Subdominant Theme: Becoming a Learning Organisation**

While participants described the persisting harmful elements of the remaining organisational and cultural legacy within the NHS Ambulance Services, they also identified and suggested pathways to becoming a learning organisation that would improve their organisational culture, as well as patient safety, going forward. All 44 participants discussed methods to become a learning organisation, which centred primarily on the following suggestions: embedding a learning culture within the NHS Ambulance Services through continued education and training for all staff, flattening the existing hierarchical structure to create a more open and supportive environment, as well as establishing leadership at all levels to help implement these changes. As mentioned within the introduction to the dominant theme, *Organisational Culture*, participants stressed that improving organisational culture would take an extensive amount of time and effort as it was perceived to be ‘...*the most difficult one to address within any organisation*’ [B5-T1] due to the many existing barriers. However, while realistic concerning the challenges present in their expectations of organisational culture change, participants appeared largely optimistic that their suggestions are achievable for the NHS Ambulance Services and that they would ultimately have a positive impact on patient safety.

*‘...if morale’s high, you can do anything. I think if you’ve got people motivated, that has a knock-on effect to excellent patient care and patient safety.’* [B3-T1]

In particular, participants emphasised that developing and embedding a learning culture within the NHS Ambulance Services, which is open and supports learning from mistakes and ‘...*where people can learn from each other and develop*’ [B4-T1], would improve the overall organisational culture:

*‘...we are still very much a backwards-looking, “let’s look at past harm” organisation, but we are trying to change that, we are trying to get a learning culture, we are trying to find out what we are doing to change our practice’ [C4-T1]*

*‘...the culture really is about coming forward, reflective practice is a big part in that, clinical support, understanding the root cause of things and then how do we address those, not just with the individual, but how do we address them within the organisation’ [A1-T3]*

It became evident that developing a culture of learning linked back to many other dominant themes within this chapter as participants perceived it to be a broad concept which covered several different areas. Participants suggested that the development of a learning culture involved expanding the training and education opportunities for staff, increasing the visibility of staff from all organisational levels and supporting front-line staff to feel comfortable discussing mistakes by tearing down the hierarchical structure. By implementing changes according to these suggestions, participants reported that it would result in a culture where staff share *‘...learning rather than hiding it’* [B4-T1], which may lead to improvements in patient safety:

*‘...the learning process is about how you bring all the different elements of safety intelligence together...triangulate in lots of different sources’ [A2-T2]*

While participants reported that a lack of training and education for front-line staff represented a significant patient safety risk, they also emphasised that continued education and training for staff at all organisational levels would have a positive impact on the organisational culture of the NHS Ambulance Services. Participants reported how management-level staff, in particular, would benefit from additional training and education, as it may change their perspectives and lead to a healthier culture where they are closer to the operational staff they manage:

*‘...have mandatory training and education for managers, and I think that’s important because it will almost force people into thinking slightly differently, having more open conversations with staff, having safety conversations with staff.’*  
[B2-T1]

Similar to the findings in the dominant theme, *Significant Patient Safety Risks*, participants felt that continued education and training would still face several financial barriers which may limit its feasibility. However, participants also described the reality of degree educated



paramedics entering management positions in the near future and how this will have a positive impact on the overall organisational culture:

*‘...people who’ve gone through the university route or the educational point are more understanding of comprises and changing aspects, but if they can go up into management, that’ll change’ [C2-T2]*

As referenced within *Organisational and Cultural Legacy*, participants felt that the organisational levels within the NHS Ambulance Services are based on a historic hierarchical structure, where staff ‘...work in silos’ [B5-T2] and are physically divided and unaware of each other’s roles and responsibilities, thereby demonstrating a barrier to improving the organisational culture within the NHS Ambulance Services. Unsurprisingly, participants expressed how flattening the hierarchical structure would facilitate staff ‘...understanding each other’s roles’ [B5-T2], and address this divide between staff to improve the organisational culture within the NHS Ambulance Services:

*‘...that sort of hierarchy, which needs to be flattened...and I’m reducing the number of senior people within my team to make a flatter structure, and I think that will just open the door a bit more’ [A2-T3]*

*‘...there needs to be some bridges to fill the gaps between us, so we all actually understand a little bit more about what we all do and how it all affects each other.’ [C5-T3]*

Participants perceived that flattening the remnants of the hierarchical structure would increase the visibility of staff from all organisational levels, as well as the perception of the support available to staff, through a more open and learning-focussed organisational culture. With the increased visibility of higher-level staff, participants reported that operational staff would be less fearful reporting errors as management and executive staff would be seen as more ‘...approachable and easy to talk to’ [B2-T3]. Additionally, it was felt that this change would then have a positive impact on patient safety, as some staff understand ‘...patient safety in a way that others don’t’ [C4-T1]:

*‘...encouraging healthy working relationships so that crews at any level feel that they can approach management at any level’ [B4-T1]*

*‘...if you make a mistake and it’s honest, such as you don’t fill your ambulance with petrol in time, you’re not going to be punished for it. And then what that then leads*

*on to patient safety is a culture where you are far more open about something that you see wrong' [A3-T3]*

When asked to describe how the fragmented hierarchical structure could be flattened to increase the visibility and approachability of higher-level staff, participants discussed how a lack of leadership could result in staff forming '*...quite distinct subcultures*' [A2-T2], and therefore their responses centred primarily on the need for increased leadership within the NHS Ambulance Services. Participants, predominantly from the executive and management-levels, expressed how leadership by staff can be utilised to drive forward the proposed changes discussed above to improve the organisational culture within the NHS Ambulance Services:

*'I think that's a cultural shift in this organisation because it's all about leadership and the importance of that leadership and driving that through the heart of what we do as an organisation' [A4-T1]*

In addition to being perceived as capable of changing the organisational culture in the NHS Ambulance Services, participants also expressed that leadership is vital to ensuring that patient safety is emphasised and represented adequately throughout the services:

*'...it's the attitudes and the behaviours that the leadership team display that actually have the biggest impact...which ultimately I think will improve patient safety' [B4-T2]*

*'The organisational culture and leadership needs to make sure that the ethos of patient safety and ethos of doing the right thing for the right patient at the right time' [B3-T3]*

According to participants, previous models of leadership in the NHS Ambulance Services exclusively concerned '*...people at the top*' [B4-T1], chiefly the executives, as they were seen as the only members of staff who had the authority to be leaders and the capacity to influence organisational culture. However, as participants felt that there is '*...a very conspicuous absence of positive clinical role models*' [B4-T2] in the NHS Ambulance Services, as well as that executives and managers '*...can't all be everywhere*' [A3-T2] and rarely see front-line staff, leadership was now viewed as the responsibility of staff across all organisational levels:

*'I don't mean leadership in a hierarchical structure, I mean leadership in a distributed leadership model where you have leaders across the organisation'*  
[A4-T1]

*'...in the field, I'd like to see advanced paramedics and specialist paramedics supporting your general front-line workforce'* [A1-T2]

While all 44 participants discussed how organisational culture could be improved in the NHS Ambulance Services to have a positive impact on patient safety by becoming a learning organisation, some differences between organisational levels became apparent when discussing leadership. For example, the perception that leadership could be utilised to improve organisational culture was primarily held by the executive and management-level participants, while responses from the operational-level concerning this issue were mostly absent.

## **4.9 CHAPTER SUMMARY**

The findings outlined within this chapter were structured within the following five dominant themes: *Varied Interpretation of Patient Safety*, *Significant Patient Safety Risks*, *Reporting Culture Shift*, *Communication* and *Organisational Culture*. These dominant themes and their respective subdominant themes constitute and illustrate the overall staff perceptions of patient safety from a range of organisational levels in three English Ambulance Service NHS Trusts. The findings are summarised below, where the most significant results are highlighted, as well as when there were evident differences across either organisational levels or Ambulance Service NHS Trusts. While these subdominant themes represent the perceptions of patient safety when combined, they are summarised separately within their respective headings as this is the format used within the Discussion Chapter (Chapter 5).

### **4.9.1 Summary of Theme One: Varied Interpretation of Patient Safety**

As demonstrated within this theme, the interpretation of patient safety is divided into two groups: *Systems Thinking* and *Direct Patient Care*. In *Systems Thinking*, patient safety is interpreted as an all-encompassing concept which is present within all areas of the organisation, whereas, in *Direct Patient Care*, the interpretation exclusively concerns clinical treatment and the prevention of harm. The most evident divide between organisational levels emerged within this dominant theme, where operational-level participants interpreted

patient safety as relating to direct patient care, while management and executive-level participants interpreted patient safety with a systems thinking approach, including structural and procedural aspects of the organisation. There was some crossover, where executive and management-level participants understood and described patient safety as relating to patient harm, for example; however, this was minimal and not at all representative of the entire sample in this study. While there were differences in the interpretation of patient safety between organisational levels, potentially attributable to variation in roles and responsibilities, these views were consistent across the three Ambulance Service NHS Trusts.

#### **4.9.2 Summary of Theme Two: Significant Patient Safety Risks**

Participants reported several patient safety risks perceived as significant and these were grouped into three subdominant themes, including *Service Demand Pressures*, *Triaging*, and *Lack of Training and Deskillling*. The significant patient safety risk of *Service Demand Pressures* addressed the patient safety issues posed by the increased demand by service users, which is seen as unsustainable with the current level of resources. It was clear that the impact of demand has been felt by all three Ambulance Service NHS Trusts and organisational levels, as almost every participant discussed the risks that it presents to patient safety. Similar to *Service Demand Pressures*, participants representing all three organisational levels and NHS Trusts discussed the patient safety risks presented by the triaging system and the lack of EOC clinical knowledge. However, while the previous two subdominant themes were discussed by participants across all levels and NHS Trusts, *Lack of Training and Deskillling* was discussed most frequently by management and operational-level participants while executive-level participants did not comment on these factors as often. As management-level staff often coordinate and provide the training that operational staff receive, it is logical that those from the executive-level may not be aware of this issue, as it is not connected to their role or responsibilities.

#### **4.9.3 Summary of Theme Three: Reporting Culture Shift**

As demonstrated within the dominant theme, *Reporting Culture Shift*, participants discussed the state of reporting culture both from a historical and modern perspective. Participants expressed that the reporting culture in the past had been inadequate, where staff did not

report incidents due to fear of punishment, and that it has shifted to an open and proactive reporting culture currently, where staff are encouraged and supported to report by their organisations. While 41 participants indicated that the reporting culture had improved, perceptions concerning the existence of blame culture were somewhat variable, as some participants stated that it was eliminated, while others felt that it still existed in some parts of the organisation. Overall, no significant differences were evident in the responses of participants across organisational levels and Ambulance Service NHS Trusts. However, executive-level participants did appear to be slightly more optimistic concerning the state of reporting culture within their respective organisations when compared to the management and operational-level participants.

#### **4.9.4 Summary of Theme Four: Communication**

Participants perceived that communication had a significant impact on patient safety within the NHS Ambulance Services. In particular, participants raised communication issues concerning *Infrastructural Resources*, including IT infrastructure and the multiple channels of communication, as well as *Workforce Resources*, involving communication issues stemming from operational pressures and the mobile workforce. The IT infrastructure in the NHS Ambulance Services was viewed as outdated and inadequate in meeting the current communication needs of staff, while information sent over a single channel of communication was perceived as missing large subsets of staff. Concerning workforce resources, participants reported that front-line staff no longer have the time to read information and that the nature of the role, where staff are on ambulances roaming around large geographical regions and rarely return to their station, presents a unique challenge to communicating with staff.

While participants from all three organisational levels and NHS Trusts referenced a majority of the communication issues related to infrastructural and workforce resources, it was evident that participants from NHS Trust T3 discussed IT infrastructure more frequently than those from NHS Trusts T1 and T2.

#### 4.9.5 Summary of Theme Five: Organisational Culture

Similar to the dominant theme, *Communication*, participants felt that organisational culture had a significant impact on patient safety in the NHS Ambulance Services. *Organisational Culture* was discussed by participants within the context of an entrenched *Organisational and Cultural Legacy* which has led to persisting harmful elements still existing in the services today, including a focus on response time targets, aversion to risk and a command and control hierarchical structure. Participants also discussed pathways to *Becoming a Learning Organisation*, which they felt would ultimately improve the organisational culture and patient safety as a result. This process involved several components, including continued education and training for staff, developing a culture of learning through flattening the remaining hierarchy to establish a more open environment, as well as utilising leadership at all levels. While all 44 participants contributed to *Organisational Culture*, some significant differences emerged across organisational levels when discussing specific elements within the subdominant themes.

Within *Organisational and Cultural Legacy*, operational-level participants emphasised risk-aversion more frequently than the other two levels, while executive-level participants discussed response time targets more than management and operational-level participants. In *Becoming a Learning Culture*, participants at the executive and management-level emphasised the need for leadership within the NHS Ambulance Services, while those from the operational-level discussed leadership less often.

The following chapter presents the critical interpretation of the findings discussed within this chapter while situating them within the broader literature to identify commonalities and differences, thereby highlighting the original contributions to knowledge produced by this study.

## Chapter 5 - Discussion

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### 5.1 INTRODUCTION

This chapter aims to provide a comprehensive and synthesised discussion of the findings while situating them within the broader body of evidence. The studies discussed within the Introduction Chapter (Chapter 1) and Literature Review Chapter (Chapter 2), as well as the relevant broader literature, will be drawn upon to identify and highlight the differences and commonalities of the findings with the current evidence to establish the significant and original contributions to knowledge which emerged from this study.

In the preceding chapter, five dominant themes were identified, including *Varied Interpretation of Patient Safety*, *Significant Patient Safety Risks*, *Reporting Culture Shift*, *Communication* and *Organisational Culture*. These dominant themes capture the perceptions of patient safety according to the participants in this study, as they each reflect elements of patient safety within different core concepts. It is important to note that these dominant themes should not be viewed as separate issues in isolation, but instead as significant and interconnected elements which have some degree of overlap. For instance, within *Reporting Culture Shift*, there are issues which relate to the existing historical remnants found in the subdominant theme: *Organisational and Culture Legacy*. However, the shift in the reporting culture was determined to be of too much significance by both participants and the literature to be hidden within another theme, such as in *Organisational Culture*, and so it formed its own dominant theme. In addition, the five dominant themes discussed below arose from the thematic analysis of the 44 semi-structured interviews with participants, and it is therefore important to note that they do not represent the totality of perceptions of patient safety in the NHS Ambulance Services, and only represent the views of these participants in the context of their interviews. While these issues were significant and important to the participants, it is entirely possible that this list is incomplete and participants from other Ambulance Service NHS Trusts would have added distinct perceptions of patient safety. However, the limitations of this study are discussed more in-depth within the subsequent chapter.

A key finding of this study is that the perceptions of patient safety in the NHS Ambulance Services have been shifting and improving over time. Looking back, this concept can be

traced to the Introduction Chapter, which highlighted how the role, structure and scope of the NHS Ambulance Services has been becoming increasingly medicalised and robust over the previous century. Within the first chapter, it was suggested that capturing the perceptions of patient safety against the backdrop of these large-scale changes would be important, and the findings from this study supported this claim. As demonstrated within the Findings Chapter, participants typically referenced the NHS Ambulance Services both from a historic and current perspective, which provided the scope of the shift of the perceptions of patient safety and how it has improved. For example, participants largely discussed the existence of a historically poor reporting culture in the NHS Ambulance Services, and how it has significantly shifted recently to a more positive and open reporting culture due to increased organisational emphasis and support, as well as the introduction of online reporting infrastructure. This shift was evident across most of the perceptions of patient safety identified in this study, as perceived improvements to the understanding of patient safety, communication and organisational culture have also been emphasised by participants. In addition, the significant risks to patient safety have also shifted in light of the increased level of demand by patients, and so it could be argued that the perceptions of patient safety are all in the process of transitioning.

This chapter will be structured according to these dominant themes as headings, and will then lead to a final summary of the study's findings, including the original contributions to knowledge. Each theme within this chapter begins with a summary of the significant findings of the study. This summary is then followed by the meaning and importance of the findings, where they fit in relation to the broader literature, before concluding with their clinical relevance. In addition, the strengths and limitations of this study and recommendations for future research, policy, practice and education, are separate from the discussion and can be found in the subsequent chapter (Chapter 6). The Reflections of the Research Chapter (Chapter 7), the final chapter, then presents the reflections of the researcher while undertaking the study, as well as following its conclusion, before the thesis is then concluded with a final word.

## **5.2 VARIED INTERPRETATION OF PATIENT SAFETY**

The findings from this study demonstrate that the interpretation of patient safety is context and role-dependent and varies consistently across the three organisational levels of staff in the three Ambulance Service NHS Trusts involved in this study.



Within the Introduction Chapter (Chapter 1), a single definition of patient safety was selected to establish the scope of the study and to provide some consistency as a multitude of definitions are available in the literature. Ultimately, the definition provided by the Institute of Medicine (IOM) was chosen, as it was determined to be validated, current, and had application in the NHS Ambulance Services and other international ambulance and emergency services.

*'the prevention of harm to patients'* (Aspden et al., 2004, p. 5)

As staff provided their interpretation of patient safety and what it meant to them, the IOM definition will be revisited in this section to evaluate whether it is fit for purpose, or whether a new definition should be developed. Based upon the findings, it is possible that a new definition may be required not only bespoke to the NHS Ambulance Services but also contextualised for each organisational level of staff and the work that they do.

The first objective of this research was to explore the meaning of the term patient safety to staff within three Ambulance Service NHS Trusts in England, and to identify if it differed between NHS Trusts and organisational levels of staff. As highlighted in the Findings Chapter (Chapter 4), participants interpreted patient safety differently according to their organisational level. Depending on their role, participants either described patient safety using a holistic and systems thinking approach, involving guidelines, protocols and other system-wide aspects of the NHS Ambulance Services, or as relating to direct patient care and the prevention of harm during treatment. Executive and management-level participants overwhelmingly interpreted patient safety holistically and as a system-wide concept in the NHS Ambulance Services, including a statutory responsibility for implementing and managing service governance structures, which they viewed as having an impact on patient safety. Operational-level participants interpreted it in terms of direct patient contact, where they discussed their effect on patient safety through the scope of preventing harm and providing safe care when treating individual patients. However, while the meaning of patient safety varied per organisational level of staff, it remained consistent across the three Ambulance Service NHS Trusts. Given the significant lack of literature in this area, this study provides the first understanding of how staff in the NHS Ambulance Services interpret and understand patient safety across three organisational levels, thereby demonstrating the importance and significance of the findings. Capturing the interpretation of patient safety by

participants was determined to be important as an in-depth exploration of the concept can identify and define attributes of patient safety by staff within the NHS Ambulance Services, thereby providing a deeper understanding of the concept.

Somewhat unsurprisingly, it appeared that the interpretation of patient safety is context and role-dependent and analogous to the day-to-day requirements of their job, where participants derived their meaning of patient safety from the roles and responsibilities typical of each organisational level. There was some crossover, where a small number of participants from the executive and management-levels interpreted patient safety as relating to direct patient care, for example. However, this was minimal, and it was evident that the roles of these participants had strong clinical links where they routinely worked alongside operational staff, possibly contributing to their interpretation of patient safety which did not align with their management or executive position. Several participants at the management and executive-levels also referenced both interpretations of patient safety and noted how some subsets of staff view it as relating to direct patient care while they interpret it with a systems thinking approach. Participants who distinguished between both interpretations of patient safety originally had begun their careers as paramedics, which provided them with a perspective from this organisational level, as well as from the management and executive levels as they progressed in their careers. It was clear that while some operational-level participants worked within a supervisory or advisory capacity in addition to their clinical role, none held any management duties or had any experience working to develop policies or procedures which impacted the entire organisation. The lack of experience of these responsibilities potentially explains the limited perspective of these participants, which only involved direct patient care.

Before this study, minimal qualitative research was available which captured the interpretation of patient safety by staff from a range of organisational levels in the NHS Ambulance Services, presenting difficulties in relating the findings to previous studies. However, as first mentioned in the Introduction Chapter (Chapter 1), research has shown there is no standardised classification of the concept, as data around patient safety is currently defined, measured and interpreted differently in healthcare and research (Davies, Hébert and Hoffman, 2003; Emanuel et al., 2008; Fisher et al., 2015; Kim et al., 2015; Sherman et al., 2009). These discrepancies in how patient safety is interpreted or defined present a barrier to the evaluations and advancements of patient safety strategies, policies

and research, as the lack of a consistent interpretation prevents a uniform understanding of the term and related concepts (Davies, Hébert and Hoffman, 2003; Emanuel et al., 2008; Fisher et al., 2015; Kim et al., 2015; Sherman et al., 2009). To address this gap, developing a universal definition of patient safety was named as a strategic research priority at the summit of experts in Bigham et al. (2011).

Additionally, this lack of a consistent interpretation extends beyond research to practice, where Fisher et al. (2015) identified that annual reports and quality accounts produced by the NHS Ambulance Services used a wide range of terminology when discussing patient safety. Difficulties were then presented for authors attempting to distinguish patient safety-related issues from the standard provision of care, for example. Similar to the findings in Fisher et al. (2015), Fairbanks et al. (2008) found that staff in the emergency medical services (EMS) had a limited understanding of the definitions of errors, adverse events and near-misses. Minimal understanding of these definitions thereby acts as a barrier to error reporting within the services as staff interpret and understand these patient safety terms differently (Handler et al., 2000). The discordance in the literature shares parallels to the findings of the current study, as staff across organisational levels appear to all have a unique understanding and interpretation of patient safety and its scope heavily influenced by their role and context. This varied interpretation by participants contributed to the lack of a standardised approach, as patient safety means one thing to front-line staff and another thing to management and executive staff (Ilan and Fowler, 2005; Runciman, 2006; Thomas and Petersen, 2003; Walton et al., 2010).

While limited evidence exists concerning the interpretation of patient safety by staff in the NHS Ambulance Services, commonalities in how patient safety was interpreted and understood by participants were aligned with the definitions found within broader literature. As previously highlighted within the Findings Chapter (Chapter 4), two distinct interpretations of patient safety emerged and established the subdominant themes, *Systems Thinking* and *Direct Patient Care*. Parallels can be found within Reason (2000) and Vincent and Amalberti (2016), the former of which suggested that there are two approaches to understanding safety and harm in healthcare organisations. Reason (2000) cited a person approach, which focuses on clinical care and the mistakes caused by individuals, and system approach, which suggests that harm is a result of systemic factors rather than the actions of individuals (Kim, 2016). The person approach captures the

interpretation of operational-level participants, who spoke in terms of personal responsibility to prevent harm while treating patients without acknowledging any of the other potential system-wide influences. The system approach, in contrast, was aligned with the interpretation of patient safety by management and executive-level participants, who expressed that patient safety was a present feature throughout the entire organisation and related to the underlying system and organisational procedures and policies.

According to the literature, the person approach represents a more traditional perspective of errors and patient safety, while the system approach and systems thinking gained more prominence after healthcare organisations began to look externally to high-reliability organisations (HROs) to identify where patient harm originates and to improve patient safety (Carroll and Rudolph, 2006; Emanuel et al., 2008; Kim, 2016; Reason, 2000; Weick and Sutcliffe, 2001). This shift in the interpretation is captured by Vincent and Amalberti (2016), who argue that in 1995, patient safety was primarily defined as the direct impact of care and harm in healthcare organisations. Two decades later, patient safety is still interpreted in this way; however, there is now a more comprehensive understanding of the influences of an organisation on human error. As a result, it could be reasoned that operational staff in the NHS Ambulance Services have not yet adopted this new definition of patient safety, while higher-level staff now mostly view errors as the result of broader organisational influences, rather than the fault of a paramedic. However, while operational-level participants interpreted patient safety in alignment with the person approach by Reason (2000) and the 1995 definition by Vincent and Amalberti (2016), it is expected that their interpretation is limited to direct patient care, as exposure to organisational procedures and processes is minimal. It is also possible that the interpretation of patient safety is determined and influenced by poor intra-organisational communication, as disseminating information to operational staff is becoming increasingly difficult. Therefore, front-line staff may remain unaware of organisational and structural changes and how they are impacting patient safety. For example, as operational staff continue to become busier with growing operational pressures and the clinical aspects of their roles, they are further divorced from the broader organisational developments, and the scope of their definition may be limited to their clinical work.

Beyond the close association with the person approach by Reason (2000) and Vincent and Amalberti (2016) as detailed above, the interpretation of patient safety by operational-level

participants was similar to the definitions of patient safety by well-known international healthcare organisations. As can be seen in Table 3 within the Introduction Chapter (Chapter 1), these include the World Health Organization (WHO), the Institute of Medicine (IOM) and the Institute for Healthcare Improvement (IHI), whom all consistently define patient safety as relating to the prevention of patient harm. As mentioned earlier, participants appeared to interpret patient safety as analogous to their role and responsibilities in the NHS Ambulance Services, where operational-level participants described patient safety within the context preventing harm during direct patient care, capturing the duties in their clinical role. A majority of participants appeared to express an interpretation of patient safety that was both candid and unprepared. However, many participants from the operational-level shared that they read up on patient safety and the relevant literature in preparation before the interview. It was suspected that some participants were repeating an interpretation based upon an existing definition, thereby influencing their definition of patient safety, which may explain why they were similar to the most prominent definitions in the literature. In addition, a small number of participants, predominantly at the operational-level, found the question challenging and expressed that they did not know precisely what was being asked for concerning their interpretation of patient safety. Occasionally, to provide additional context, they were asked to describe what patient safety meant to them within the context of what they did within their role, for example, to give them a starting point. However, it was emphasised that this was just an example, and their answer did not need to be based on what they do within the NHS Ambulance Services. The occurrence of this type of situation was minimal. However, it is possible that these participants were less inclined to provide an interpretation of patient safety which was broad and comprehensive, as they felt they were being asked to describe how their role was connected to patient safety.

While there is a significant lack of literature concerning the interpretation of patient safety in healthcare organisations, research is available which demonstrates a difference in the overall perceptions of patient safety by staff across various levels of an organisation. This evidence may support the findings of this study by providing an explanation as to why the interpretation of patient safety varies across organisational levels. As demonstrated within the literature review, Gallego et al. (2012) identified an association between the organisational level of staff and their attitudes toward patient safety in the ambulance services, as front-line and management staff reported markedly different perceptions

according to their responses to the Safety Attitudes Questionnaire (SAQ). Results from the NHS Staff Surveys also demonstrate that staff from different organisational levels, such as management or operational staff, have different perceptions of patient safety as their responses often vary widely according to each question (NHS Survey Coordination Centre, 2018). While the literature is limited in the ambulance and emergency services, related research in other healthcare environments, such as in hospitals and ambulatory care units, has identified significant differences in perceptions towards patient safety when comparing front-line and management staff, indicating that the findings of this study are consistent with wider trends in healthcare (Hickner et al., 2015; Listyowardojo, Nap and Johnson, 2011; Richter, McAlearney and Pennell, 2016; Singer et al., 2007; 2008). For example, Gallego et al. (2012) and Kim et al. (2007) demonstrated that senior managers and executives perceive aspects of patient safety more positively than front-line staff. This finding potentially explains the differing interpretations of patient safety by participants at the operational-level when compared with those at the management and executive levels in the current study. However, these quantitative measures, such as the SAQ and NHS Staff Surveys, do not explore the interpretation or understanding of patient safety by respondents. Therefore, it is unknown if the differences in perceptions across organisational levels of staff, as highlighted in the literature, are connected to differing interpretations of patient safety captured in this study.

While it may not be immediately evident how the interpretation of patient safety by staff in the NHS Ambulance Services has a direct impact on patient care, it does ultimately have extensive clinical relevance. As demonstrated earlier, operational participants interpret and understand patient safety in close alignment to its historical model, indicating there has not been much progress over the last couple of decades. However, the findings also suggest that executive and management-level staff have since transitioned away from the previous definition and have adopted a more comprehensive understanding of the term, potentially having an impact on how errors are managed and learned from in the NHS Ambulance Services. For example, as management and executive-level staff interpret patient safety using a systems thinking approach, they may be less likely to view mistakes by clinical staff in isolation, and instead will look for broader organisational influences, thereby lessening blame and punishment on individual practitioners and leading to a more open and just culture. Within the theme, *Reporting Culture Shift*, executive and management-level participants described how patient safety incidents were the result of systemic influences,

rather than human error, potentially linking back into how they interpret and understand patient safety.

As first discussed within the Introduction Chapter (Chapter 1), advancements in patient safety, namely its application within practice and policies, as well as how it is measured, have been impeded by the concept's lack of consistent classification. While definitions by the World Health Organization and the Institute of Medicine have the prevention of harm as a central premise, some argue that they remain overly vague and that definitions need to be tailored to fit individual care settings (Montoya and Kimball, 2013; Singer et al., 2009a; Wachter, 2012). As Fisher et al. (2015) identified a lack of standardised terminology concerning patient safety for the ambulance and emergency services, the findings of this study could be used to establish a definition which accounts for the varied interpretation across organisational levels so that it is embedded throughout the organisation. These findings can then help to advance the standardisation of the concept of patient safety in the NHS Ambulance Services to aid in the facilitation of taxonomic research to ensure consistent application and measurement of data within clinical practice, policies and research (Kim et al., 2015). As referenced at the beginning of this section, the definition of patient safety by the Institute of Medicine was selected to define the scope of the study; however, upon reflection, this definition may be inadequate to comprehensively address and emphasise the different interpretations and understanding identified by this current study. Therefore, while Montoya and Kimball (2013), Singer et al. (2009a) and Wachter (2012) argue that definitions of patient safety should be tailored to specific care settings, this study indicates that it may also be necessary to customise and contextualise the definition for the different organisational levels of staff and their chief responsibilities.

In addition, the findings from this current study may also support the NHS Ambulance Services in understanding how the concept of patient safety is interpreted and understood at different organisational levels, thus aiding in the design of approaches to effectively communicate patient safety-related information. For example, when the executive and management-level staff instigate organisational change within the NHS Ambulance Services, they could aim to convey to operational staff how these ultimately have an impact on patient safety. Thus, operational staff may be more likely to have an understanding of patient safety which is broader and linked to all aspects of the organisation, rather than

feeling like changes made by higher-level staff did not ultimately have an impact on the safety of patients.

### **5.3 SIGNIFICANT PATIENT SAFETY RISKS**

The findings from this study demonstrate that participants representing staff from three organisational levels across three NHS Trusts in the NHS Ambulance Services perceive that service demand pressures, triaging and the lack of training and deskilling of front-line staff constitute the most significant patient safety risks and have substantial implications for patients.

The second objective of this study was to '*investigate staff perceptions of risks to patient safety*' in the NHS Ambulance Services, as the Literature Review Chapter (Chapter 2) highlighted that risks to patient safety and patient safety issues were recurring themes within the broader literature landscape (Atack and Maher, 2010; Bigham et al., 2011; Chesters, Grieve and Hodgetts, 2016; Fairbanks et al., 2008; Fisher et al., 2015). While this area has been explored in research previously, there is an evident lack of consistency across their findings; possibly a result of their different methodologies, or varied titling of patient safety risks, as two studies may identify similar risks and label them differently, thereby presenting difficulties in their comparison. It was also apparent that the available evidence in this area was conflicted depending on their samples. For example, as highlighted in the literature review (Chapter 2), some research including zero clinicians identified specific significant patient safety issues, while other studies including clinicians indicated that those issues did not present a risk to patients, potentially highlighting a divide in perceptions across organisational levels, roles and the country where it was conducted. Therefore, given the wide range and often conflicting patient safety risks identified in the literature, these findings provide an in-depth look at the perceptions of threats to patient safety across a range of organisational levels and NHS Trusts in the English NHS Ambulance Services, thus highlighting the importance of this study.

As first described within the Findings Chapter (Chapter 4), similar to the interconnected nature of the themes which comprise the overall perceptions of patient safety, participants were deeply aware of the existing interlinking nature of the significant risks to patient safety. For instance, the increasing demand by service users was seen as having a cascading



impact in all other areas of the NHS Ambulance Services. In particular, participants noted how demand was placing growing pressure on the infrastructural and workforce resources, ultimately leading to delayed care for patients. In addition, while some subdominant themes were touched upon by all participants, such as *Service Demand Pressures*, as it has an impact on staff in all organisational levels, it was clear that other patient safety risks were perceived as prominent issues only in certain organisational levels, where they have direct exposure to the dangers they present.

According to participants, the patient safety risks presented by the increasing level of demand by service-users in the NHS Ambulance Services were momentous and often dominated the focus of many interviews. As first referenced in the Introduction Chapter (Chapter 1), demand has grown annually by an average of 5.2 percent since 2011 to 2012 (National Audit Office, 2017). While some patient safety risks may only be evident to those directly exposed in particular subgroups of staff, the enormous pressure to respond to the rise in demand by service-users was felt by participants in all three organisational levels (National Audit Office, 2017). Although these participants all expressed how demand was a significant patient safety risk, it was evident that the risks were perceived by participants differently, respective of their roles. For instance, front-line participants referenced how they are increasingly busy and have less time between jobs; management-level participants discussed how demand pressures were assuming priority and displacing other critical aspects of their roles, such as coordinating training, and executive-level participants raised how they have fewer resources and inadequate funding to adjust accordingly against the rise in demand.

Surprisingly, and potentially illustrative of the lack of literature in this area more generally, there is not a substantial amount of research which explores the risks that are presented by the growing demand in the NHS Ambulance Services. Although the topic of the rising demand is notably present in the literature, it is typically ignored as an independent risk and is instead discussed as an underlying factor exacerbating other more considerable risks. While participants in this study emphasised that service demand pressures represented the most significant risk to patient safety, there were some shared parallels with the broader literature, as participants also referenced it as an underlying issue affecting many other areas of the NHS Ambulance Services. For example, when participants discussed service demand pressures, they did not perceive it as an isolated issue, but one which was

interwoven throughout the entirety of the NHS Ambulance Services representing a far-reaching patient safety risk. Participants expressed that the growing demand was partly a result of increased non-emergency patient use (O’Cathain et al., 2018; Pope et al., 2017; Turner et al., 2013), that it diminished their workforce and infrastructural resources (Fisher et al., 2015; O’Hara et al., 2014; 2015), resulted in front-line staff feeling more fatigued and prone to mistakes (Atack and Maher, 2010; Wilkinson, 2015), as well as had ultimately led to delayed patient care (Fisher et al., 2015), as the NHS Ambulance Services do not have the resources to cope with the continued and substantial increase in 999 calls (National Audit Office, 2017).

While the literature suggests that demand is predominantly rising due to an ageing and growing population, changes in population health, inaccessibility of other services, community expectations and health system operations, participants instead focussed on another issue entirely (Livingstone et al., 2007; Lowthian et al., 2011b; National Audit Office, 2017; Toloo et al., 2011; Wankhade, 2011). According to participants, the sharp rise in demand has primarily been a result of increased non-emergency patient use, including frequent callers, who are seen as exhausting their dwindling resources. This concern was unique to the operational-level, where participants often expressed frustration that they are spending too much time with patients who do not need emergency care. As a consequence, participants referenced how they then do not have enough resources to respond to patients whom they view as requiring immediate treatment. Research by Edwards et al. (2014), O’Cathain et al. (2018), Pope et al. (2017), Scott et al. (2013) and Turner et al. (2013), have noted an increase in non-emergency use by patients, thereby supporting this finding. Data from the National Audit Office (2017) also supports this finding, as they identified that demand is increasing in part due to increased presentations of mental health and alcohol-related conditions, which operational participants mentioned frequently. However, while a clear focus of front-line participants, who have direct contact with patients, as well as those from the emergency operations centre (EOC) who coordinate their care over the telephone, only a small number of participants from the executive-level and management-levels spoke about non-emergency patient use. It was expected that these levels of staff would be more reticent to ‘blame’ particular subgroups of patients who do not warrant an emergency response. Alternatively, as they are not exposed to patients regularly, they may be less aware or concerned about non-emergency use as an issue.

A principal concern of participants was that the increase in demand was outpacing the available workforce and infrastructural resources, thereby presenting significant risks to patient safety as the NHS Ambulance Services currently do not have enough staff, equipment and vehicles. Each 999 call requires a substantial amount of resources, including both infrastructural and workforce-related, to safely respond to patients, and it was evident that participants were incredibly conscious of the impact of increasing demand on these resources (Lowthian et al., 2011a). For example, when conducting interviews within the headquarters of two Ambulance Service NHS Trusts, I was brought into the EOC, where there was a large screen flashing with bright colours which designated how many 999 calls were currently waiting for a call-handler, as well as how many triaged patients were currently waiting for an ambulance. It was evident that this screen has had an impact on staff, as many participants who work within the headquarters or who had been to the EOC, referenced it to emphasise the disparity between demand and resources.

The finding that demand presents a significant risk to patient safety was supported both by the literature, as well as by official figures from the National Audit Office (2017) and NHS Survey Coordination Centre (2018). The National Audit Office (2017) cites the resourcing challenges faced by the NHS Ambulance Services, as well as that their funding increases have not matched the rise in demand. In addition, results from the NHS Staff Surveys indicated that only 55 percent of staff feel that they have enough resources to do their work (NHS Survey Coordination Centre, 2018). The broader literature has also identified demand as a significant patient safety issue, including two similar studies conducted with staff in the English NHS Ambulance Services. O'Hara et al. (2015) indicated that the high level of demand in the NHS Ambulance Services and the pressure it places on available resources was a concern of staff, primarily from the front-line, directly supporting the findings of this study. Fisher et al. (2015) also demonstrated that the available resources represented a patient safety risk, as seven medical directors in the NHS Ambulance Services rated the available resources as a moderate concern for patient safety. However, Fisher et al. (2015) may conflict slightly with the findings, as medical directors indicated that they view it as less of a patient safety issue than triaging and call handling, whereas a majority of participants in this study emphasised that the demand and resource mismatch was the most significant patient safety risk. However, the varied methodological approaches of these studies may explain this difference. This study and O'Hara et al. (2015) utilised a qualitative methodology, while participants in Fisher et al. (2015) ranked ten areas of concern for

patient safety. As a result of this approach, the findings of Fisher et al. (2015) may not have adequately captured their perceptions concerning the risks presented by insufficient resources due to increased demand. In addition, while these two studies primarily focussed on a specific organisational level of staff, the findings from the current study demonstrate that staff across the NHS Ambulance Services feel that they do not have adequate levels of resources to confront the rising demand.

Directly related to the increased demand and inadequate levels of staff, participants were concerned that front-line staff are increasingly overworked, presenting a risk to patient safety, as they are fatigued and more prone to making mistakes. According to the NHS Staff Surveys, 54 percent of staff in the NHS Ambulance Services did not feel there were enough staff for them to do their job correctly, and over 80 percent reported that they were working beyond their shifts as front-line staff have to complete a job with a patient regardless of their finish time, sometimes requiring several additional hours (NHS Survey Coordination Centre, 2018). As demonstrated in the previous chapter, some operational participants were quite candid about the stress and pressure placed on them by the increased demand. These participants would sometimes share that they have fallen asleep while driving home from a shift or have been in a state of fatigue where they forgot some steps of treatment or to provide medication, for example. The broader literature found that paramedic fatigue, often a result of workload, was perceived to contribute to safety errors and represented a significant patient safety risk, directly supporting this research and substantiating the severe consequences of the demand and resources mismatch (Aiken et al., 2011; Attack and Maher, 2010; Courtney, Francis and Paxton, 2013; Liu et al., 2013; Paterson, Sofianopoulos and Williams, 2014; Patterson et al., 2012). It was evident that these participants were predominantly from the operational and management-levels, where they had either direct experience of treating patients under the pressures of demand or managed and regularly met with front-line staff to hear their concerns.

While the pressures of demand and the inadequate levels of infrastructural and workforce resources are felt across the NHS Ambulance Services, it was clear that participants perceived that the lack of available resources ultimately resulted in delayed care for patients, which represented a significant patient safety risk. Due to the growing mismatch between the available resources and demand, some patients, dependent on their condition, have to wait for extended periods until there is an available ambulance, or until they can

receive care while waiting at an overcrowded A&E (National Audit Office, 2017). Participants, especially at the operational and management-levels, often recounted stories where patients were left waiting for hours while no ambulances were available to pick them up, or at the A&E, where overcrowding required waiting in the queue while their condition deteriorated. Delayed handover at A&E was a particular concern, as crews cannot go to the next job until they have handed the patient over to hospital staff, as per JRCALC Clinical Practice Guidelines. As a result, crews are then unable to respond to other 999 calls, thereby compounding the negative impact of an insufficient level of resource, where patients are then left waiting on scene for an available ambulance. Data from the National Audit Office (2017) highlights that 500,000 ambulance hours were lost nationally due to delayed handovers at hospitals from 2015 to 2016, a number which is expected to rise with the growth in demand.

The findings which indicated that delayed patient care represented a significant patient safety risk was extensively supported in the literature (Atack and Maher, 2010; Cooney et al., 2013; Cooney, Wojcik and Seth, 2011; Eckstein and Chan, 2004; Fisher et al., 2015; Stella et al., 2008). Participants across all organisational levels raised this risk; however, those at the executive-level referenced the risk to patient safety that delayed care represents most frequently. This finding resonates with Fisher et al. (2015), as seven medical directors rated delayed care as the most significant risk to patient safety in the NHS Ambulance Services. According to the NHS Improvement (2017b), handover delays lead to a heightened patient safety risk due to several factors, including delayed diagnosis and care, as well as an inadequate number of ambulances to respond within a community. As delayed care has these far-reaching implications, executives may believe that it represents the most significant risk to patient safety, as their organisational level affords them an awareness and oversight of its broad impact. Delayed care also features strongly in the media, as news outlets regularly pen eye-catching stories about patients waiting for hours with terrible consequences for their health, representing negative publicity for these Ambulance Service NHS Trusts. Interestingly, a few operational participants felt that the Directorate was focussed on avoiding bad press as they are seen as the face of their respective organisations, as opposed to trying to solve the underlying problem, which is arguably unachievable.

Beyond the rising demand, participants also concentrated on the workforce and infrastructural resources involved in the process of triaging and how they represented a significant patient safety risk in the NHS Ambulance Services. Participants chiefly focussed their concern on the inadequacies of the NHS Pathways, a Computer Decision Support System (CDSS), as well as the lack of clinical knowledge in EOC staff. These two factors were seen as complementary as the rigidity of NHS Pathways was necessary to account for the lack of clinical knowledge of the staff using the system (Turnbull et al., 2012). It was presumed that triaging was a focal point during interviews as the current level of demand and the stress it has placed on the system and staff is highlighting its shortcomings (O'Cathain et al., 2018). Perhaps a reflection of the broader literature concerning patient safety in the ambulance and emergency services, there is minimal current evidence which explores triaging and the patient safety risk it presents in this care setting (Huibers et al., 2011; Lidal, Holte and Vist, 2013; Turner, Lattimer and Snooks, 2008; Turner et al., 2017). While scarce, there is research available, which supports the findings of this study, including Fisher et al. (2015), where triaging and call-handling were rated as the third most significant patient safety risk in the NHS Ambulance Services by medical directors. As a ranking exercise, participants in Fisher et al. (2015) were unable to elaborate or provide their reasoning for why triaging presented a considerable risk to patient safety. However, additional literature is available concerning the dangers of triaging systems, as well as the clinical knowledge of EOC staff, both of which align with the findings from this study and will be discussed below.

Participants regularly referenced how the categorisation algorithm of the NHS Pathways system scans for 'catchphrases' to identify the highest risk patients. While a feature of all triaging systems, participants felt that this myopic view ultimately resulted in a miscategorisation of 999 calls, where resources are diverted away from patients who need immediate help to treat all patients who mentioned heart or chest pain. This finding was supported by Turner, Lattimer and Snooks (2008), who found that similar to most triaging systems, the sensitivity of the algorithm becomes reduced as it minimises the instances of critical clinical risk which are missed. Another study by Zachariasse et al. (2017), which explored the validity of the Manchester Triage System (MTS), found that while it recorded moderate to good validity with most patients, that it had difficulty in accurately triaging elderly and young patients. Similar to Zachariasse et al. (2017), participants noted how their

triaging system under-triaged the elderly, a group viewed as highly vulnerable, where they were not prioritised and left to wait for prolonged periods, while their condition deteriorated.

Participants noted that although NHS Pathways was particularly adept at identifying patients at high clinical risk and no clinical risk, it was unable to assess patients with more nuanced conditions accurately. Even in instances of severe patient conditions, such as cardiac arrest, Deakin, England and Diffey (2016) and Green et al. (2019) demonstrated that NHS Pathways correctly identifies only 75.9 to 86 percent of cases, leaving a substantial amount of patients triaged incorrectly. Participants felt that the aversion to risk, an aspect of the organisational and cultural legacy of the NHS Ambulance Services, was operationalised in triaging through the NHS Pathways system. This finding is directly supported by Turnbull et al. (2017, p. 191) and O'Cathain et al. (2018), as the system is viewed as 'over-triaging' patients to ensure that no severe conditions, such as heart attacks, are missed, while a clinician would know when a call required a less urgent response, for example.

While the triaging system was viewed as a patient safety risk, a concern of participants, directly related to the inadequacies of NHS Pathways, was that EOC staff lack clinical knowledge and are unable to account for system faults and overcome or work around system limitations. Although EOC staff can probe for additional information, their responses are still heavily restricted in line with NHS Pathways, and while many participants felt that ideally, triaging should aim to allocate the right resources to each patient, Turnbull et al. (2017) suggested that their current job is to interpret and manage risk, rather than make any judgements requiring clinical knowledge. While the findings of Turnbull et al. (2017) suggest that risks arose from the competing pressures of limited resources and safely triaging patients, participants in the current study indicated that overall, the risks presented by a rigid CDSS and non-clinical EOC staff had important patient safety implications, as care was at a higher risk of being allocated ineffectively. Research by Anderson and Roland (2015), Sen et al. (2019) and O'Cathain et al. (2018) suggest that fewer calls would result in an A&E visit if they were triaged by someone with extensive clinical knowledge and more autonomous decision-making abilities. This finding directly supports the current study, as participants were largely concerned that poor triaging and an aversion to risk contributed to the rise in demand by service users. For example, some participants from overseas compared triaging in the United Kingdom with that of their native countries. One European paramedic discussed how paramedics in their home country triage patients and that they

did not send ambulances to jobs which did not require an emergency response, thereby freeing up resources.

Triaging and the risk it presents to patient safety was referenced by participants from all three organisational levels; however, the majority were from the executive and operational-level. It was expected that front-line staff would be acutely aware of triaging and its strengths and weaknesses, as they are in constant contact with EOC staff during their shifts and participants routinely expressed their frustrations of being sent to patients they perceived as miscoded by the system. However, it was surprising that executive-level participants discussed the faults of their triaging system and the lack of clinical knowledge of EOC staff so openly, as they typically came across as less critical of the NHS Ambulance Services during their interviews. Executive-level participants may have been more focussed on triaging due to their responsibility for response time targets, an idea raised by several participants at all organisational levels. Interestingly, while many participants in this study, including EOC staff, felt that NHS Pathways presented severe risks to patient safety, no participants who worked in the EOC suggested that a lack of clinical knowledge was a risk to patient safety during the processes of triaging. It is expected that they did not want to suggest that they were unqualified for their current role. Alternatively, it could be that as the current system does not require clinical knowledge, it did not occur to them that it could address some inadequacies of NHS Pathways. However, EOC staff represented a small portion of operational-level participants in NHS Trusts T1 and T2, and zero in NHS Trust T3, therefore, it is possible that including additional participants from the EOC would have found alternative views.

In addition to the patient safety risks presented by triaging, participants also referenced the lack of training available to front-line staff and how this represented a significant risk to patient safety. As demand by service-users continues to rise, directly placing increased pressures on the infrastructural and workforce resources, it was clear that participants perceived that the NHS Ambulance Services were cutting back on the amount of training offered to front-line staff to adjust accordingly. Participants noted how this was a significant patient safety risk, as the clinical knowledge and skill sets of front-line staff are at risk of declining over time without continuous updates; therefore, staff could then be treating patients incorrectly or in an out-of-date manner. It is unknown whether or not the lack of training was an issue before the demand began to increase substantially from 2011



onwards. However, many participants did mention that training used to be offered quite regularly in the past and only began to be reduced as the rate of demand increased, implying that this is a relatively new patient safety risk. This finding is directly substantiated by reports from the Care Quality Commission (CQC), as the North West Ambulance Service (NWAS) was criticised in 2017 for not allowing staff to complete mandatory training due to operational pressures, for example (Care Quality Commission, 2017b).

As covered within Chapter 2, the patient safety risks posed by the lack of training and subsequent deskilling of staff featured prominently within the literature, both in studies from the United Kingdom, as well as from overseas (Atack and Maher, 2010; Bigham et al, 2011; Chesters, Grieve and Hodgetts, 2016; Fisher et al., 2015; O’Cathain et al., 2018; O’Hara et al., 2015). Beyond the broader literature, the findings were also supported by the results from the NHS Staff Surveys, as 33 percent of respondents from the NHS Ambulance Services reported that they had not had any training, learning or development in the previous twelve-months (NHS Survey Coordination Centre, 2018). Operational and management-level participants were most concerned about the lack of training for front-line staff, while executive-level participants did not discuss this issue as frequently. This finding resonates with Fisher et al. (2015), where the eight executive-level participants interviewed, later used to develop the ranking exercise for medical directors, did not raise the lack of training available to staff as a significant patient safety concern and instead focussed on ten other risks. It was expected that operational and management-level participants would be most aware of the reduced availability of training in the NHS Ambulance Services, as well as the impact that may have on clinical practice, as these two groups are intimately connected to either coordinating and providing or participating in the training. For example, operational-level participants routinely provided examples of specific clinical treatments or patient conditions, which they did not feel comfortable with as they did not remember everything involved.

In contrast, executive-level staff may not be wholly aware of the lack of training offered to front-line staff, or they may not have wanted to bring attention to it, as it arguably portrays the NHS Ambulance Services negatively. Operational and management-level participants were also quite despondent when discussing the future of training, as they felt that the amount of training offered would be reduced further as demand continued to increase. As university educated paramedics leave the NHS Ambulance Services much faster than their

older colleagues, a rise of which has already been documented in the figures from the National Audit Office (2017), it is expected that this will place additional pressures on the availability of training for front-line staff.

As highlighted above, this study captured the perceptions of significant patient safety risks by staff representing a range of organisational levels in the NHS Ambulance Services, which were then subsequently compared and contrasted with the findings from relevant literature. However, while there were many parallels drawn to the broader literature, there was also a wide range of significant risks to patient safety which were identified in the relevant research, but were not emphasised by participants in this current study, such as the focus of the emergency medical services (EMS) and relationship to healthcare (Atack and Maher, 2010; Fairbanks et al., 2008), medication errors (Bigham et al., 2011; Fairbanks et al., 2008), the clinical judgement of paramedics (Atack and Maher, 2010; Bigham et al., 2011; O'Hara et al., 2015), and the treatment of paediatric patients (Fairbanks et al., 2008). As a result, it is important to explore and consider why participants did not raise issues which are prevalent within the literature.

The increase in demand by service users and the pressures it placed upon the NHS Ambulance Services were an evident focus of participants during interviews and had a substantial impact on each of their respective roles. Therefore, it is possible that participants did not raise other significant risks to patient safety, as they are currently dealing with and concentrating on the large-scale impact of demand, which dominated their thoughts. As demand was perceived as interconnected with infrastructural and workforce resources, participants may have also been too preoccupied with the extent of its impact to account for any other risks to patient safety fully. For example, one participant from the management-level expressed how pressures from demand had since overtaken everything they were previously responsible for in regards to patient safety in the NHS Ambulance Services. They emphasised how their past responsibilities now represented a significant patient safety risk itself as no-one took over their duties in the meantime. Alternatively, it is possible that as they are increasingly prioritising demand over their typical work responsibilities, that they have not been exposed as frequently to areas which typically concern them and have forgotten the gravity of risk they presented. If the growth in demand by service-users were to slow, where it was less of an issue, it would be interesting to replicate this study to explore which significant risks took its place. Demand is unlikely to slow within the NHS Ambulance

Services, however, and so it may be more realistic to replicate this study in a country with a comparable ambulance or emergency service, where the operational pressures from demand are not as pronounced, for instance. It is also possible that the risks raised in other related studies no longer represented patient safety risks in the NHS Ambulance Services, and therefore, the participants did not choose to discuss them during the interviews.

Capturing the perceptions of patient safety risks in the NHS Ambulance Services arguably has considerable clinical relevance, as these findings identified which areas of the services staff view as presenting the highest potential harm to patients. This comprehensive and in-depth depiction of the perceived risks to patient safety by participants representing three organisational levels of staff in the NHS Ambulance Services, can be used to inform the prioritisation of risks and the development of strategies to address them, as well as guide the improvement of policies, education and practices going forward (Atack and Maher, 2010). For example, as participants viewed the inadequacy of NHS Pathways and lack of clinical knowledge of EOC staff as presenting substantial patient safety risks, future research could explore the extent of the dangers they present and ways to improve the system to reduce risks to patient safety. As some significant patient safety risks were raised more frequently by participants in certain organisational levels, the findings from this study could also be used to broaden the awareness of these issues across the NHS Ambulance Services. For instance, operational and management-level participants emphasised the impact of the lack of training and subsequent deskilling of front-line staff on the safety of patients, while executive-level participants made minimal reference to this area. Therefore, these findings could be used to raise the Directorate's awareness of the perceived lack of training and its potential threat to patient safety.

While these findings provide an in-depth understanding of the perceptions of significant patient safety risks in the NHS Ambulance Services from all organisational levels of staff, it is essential to reiterate that the views of the participants may not represent the views of all service personnel in the participating Ambulance Service NHS Trusts or all ten NHS Trusts in England. Given the lack of consistency in the broader literature and the qualitative approach adopted for this study, the findings are not broadly generalisable; however, the significant patient safety risks raised by participants were consistent across the three Ambulance Service NHS Trusts and therefore may be generic and have application within the other seven Ambulance Service NHS Trusts in England.

## 5.4 REPORTING CULTURE SHIFT

The findings from this study indicate that the reporting culture within the NHS Ambulance Services has shifted away from its historically negative state to one that is now open and proactive where front-line staff feel they can report errors freely without fear of punishment or blame.

As demonstrated within the Literature Review Chapter (Chapter 2), previous evidence has highlighted the existence of a poor reporting culture in the ambulance and emergency services, where front-line staff are fearful of reporting mistakes and errors due to an expectation of punitive measures. To investigate this area, one of the research objectives of this current study was to explore staff perceptions of reporting patient safety incidents within the NHS Ambulance Services. By meeting this objective, the findings demonstrated that participants commented on reporting culture as it existed historically, as well as in its present state. It was felt that the reporting culture in the NHS Ambulance Services previously had been based on blame and punishment, that it lacked adequate reporting infrastructure and that the number of reported incidents may be a fraction of what actually occurred. However, participants commented that extensive work had recently been done by their organisations to address these issues, and as a result, they had observed significant and continuing improvements in the reporting culture. Participants, from all organisational levels, felt that staff were now supported by their organisations to report incidents and that this was facilitated by the introduction of an online reporting system, Datix®, which made reporting more accessible. These changes were viewed as contributing to a sharp increase in the number of reported incidents and participants perceived that fewer incidents went unreported than in the past, reflecting the previously negative reporting culture. Therefore, these findings provide some of the first evidence in the literature, both in the United Kingdom and abroad, which documents a transition from a poor reporting culture to one that is open and proactive, highlighting the importance of this study.

While the literature around the staff perceptions of reporting incidents is more developed in other care settings, such as in primary care and hospitals, there is available research which has explored this area previously in the ambulance and emergency services. The existing evidence has highlighted that the ambulance and emergency services have a notoriously poor reporting culture, as staff in this setting tend to be less inclined to report mistakes or errors, and the rate of unreported incidents is estimated to be high (Bigam et al., 2011;

2012; Chesters, Grieve and Hodgetts, 2016; Fairbanks et al., 2008; Fisher et al., 2015; Ingram, Rees and Suján, 2019; Kirk et al., 2018; Morello et al., 2012; Verbakel et al., 2015). Unsurprisingly, it was evident that the findings from this current study were strongly aligned with the broader literature, as participants representing staff across all organisational levels in the NHS Ambulance Services felt that the past reporting culture, up until recently, had been wholly inadequate due to a range of perceived barriers to reporting patient safety incidents. It was evident that these barriers to reporting had some overlap with the organisational and cultural legacy of the early NHS Ambulance Services and included a previous absence of a robust reporting mechanism or system, a lack of encouragement and support by higher level staff and the presence of a blame culture.

Participants felt that there was previously a pervasive culture of blame within the NHS Ambulance Services, where staff did not raise or report incidents as they were fearful of possible punitive measures, such as suspension, job loss or revocation of their license to practice. While many participants, including those who had been working in the NHS Ambulance Services for decades, noted that they never witnessed an instance of punishment first-hand, they remembered hearing stories of staff in other stations or NHS Trusts who did. It was clear that these stories contributed to building up a culture of blame, even if it was founded on conjecture and speculation. This fear may be attributable to the command and control origins of the NHS Ambulance Services, as participants often referenced the past military-style hierarchy of staff, which prevented raising or admitting clinical mistakes (Rabøl et al., 2012; Sutcliffe, Lewton and Rosenthal, 2004; Weller, Boyd and Cumin; 2014). The presence of a blame culture in the NHS Ambulance Services may also be directly related to the interpretation and understanding of patient safety by staff. As highlighted in the first theme, in the past there was an emphasis on human error; therefore, executive and management-level staff were more likely to view mistakes by operational staff as isolated incidents and not a result of systemic issues, which focussed the blame on individuals. The perception of a past blame culture is strongly supported by the literature, where the available research has identified evidence of a palpable blame culture within the ambulance and emergency services, which has acted as a barrier to reporting incidents both in the NHS Ambulance Services and other international systems (Bigham et al., 2011; Byrne and Bury, 2018; Chesters, Grieve and Hodgetts, 2016; Fairbanks et al., 2008; Fisher et al., 2015; Kirk et al., 2018; Ingram, Rees and Suján, 2019; O'Hara et al., 2014; 2015; Sinclair et al., 2018).

In addition to an evident blame culture in the past, another perceived barrier to reporting incidents in the NHS Ambulance Services was the lack of organisational encouragement for staff to report incidents and a lack of support available if they did. Similar to blame culture, these factors may be underpinned by the organisational and cultural legacy of the NHS Ambulance Services, which may have permeated subsequent evolutions of the service and helped to shape the negative reporting culture of the past. As first discussed in the Introduction Chapter (Chapter 1), historically, the NHS Ambulance Services were not a healthcare organisation but developed as a patient transport service (PTS), which was predominantly tasked with taking patients to the hospital to receive treatment (Blaber, 2008). Some participants referenced that reporting incidents used to be the responsibility of the hospital, as they were the ones administering clinical care and treatment to patients. Therefore, as a result of the previously entrenched hierarchical structure and the command and control focus, participants referenced a historical lack of encouragement to report patient safety incidents in the NHS Ambulance Services, thereby contributing to a negative reporting culture. This finding has direct ties to the literature, as the encouragement and support for staff to report incidents is a foundational component of a positive safety climate (Braithwaite et al., 2009; O’Cathain et al., 2018; Sexton et al., 2006). In addition, relevant research has determined that without an emphasis on staff encouragement to report incidents, it is less likely that staff would feel comfortable raising errors or mistakes (Bigham et al., 2011; Ilan et al., 2011; Moore and McAuliffe, 2012; van der Gaag et al., 2017; Vincent, Stanhope and Crowley-Murphy, 1999).

Participants also routinely referenced the previous absence of reporting infrastructure in the NHS Ambulance Services and how this represented a significant barrier to reporting patient safety incidents. While reporting systems and reporting infrastructure have existed for decades, they have not always been easily accessible and typically required a good deal of effort to use (Vincent, Stanhope and Crowley-Murphy, 1999; Jennings and Stella, 2010; Pointer and Osur, 1987; Vrbnjak et al., 2016). According to participants in this current study, the NHS Ambulance Services previously did not have a robust reporting system, and instead relied on paper-based forms to record incident data that they had to fill out by hand. It was evident that participants were not fond of the old paper-based model for reporting incidents, as front-line staff would have to return to the station to complete the form at the end of a shift, representing an additional burden. This finding is consistent with similar research by Jennings and Stella (2010), who found that burdens represent a significant

barrier to reporting incidents in the emergency services, where staff are less likely to report without an easily accessible reporting tool, or if some time had passed after the incident. This finding is also supported by the broader literature conducted in other care settings, showing that an absence of a reporting system, or the inadequacies of an existing one, present a barrier to reporting incidents (Macrae, 2015; Mostafaei et al., 2014; Vrbnjak et al., 2016). However, when compared to other care settings, the problems presented by inadequate reporting infrastructure within the NHS Ambulance Services are magnified as staff are increasingly away from their station and colleagues, thereby introducing additional barriers to reporting incidents.

As the past reporting system and forms were paper-based, participants were concerned that it was not conducive to organisational learning from reported incidents. One participant, a high-level department head, referenced an experience of going to a station where the local manager had a box of incident forms collected over several years with no idea what to do with them. According to participants, because of stories like these, staff were then unwilling to report incidents, as they perceived that if their organisation did nothing with the information, that there was no point. This finding was supported by Jennings and Stella (2010), who identified that a barrier to reporting incidents was the lack of confidence in staff that reporting an incident would lead to any discernible change. While the paper-based form did not aid in organisational learning from patient safety incidents, Datix® has an option of letting the person who submitted the report know the outcome by providing feedback for staff. However, participants reported that it does not always work and there is occasionally an issue of confidentiality, which prevents feedback concerning the outcome of the potential investigation.

While the literature and findings of the current study shared many parallels concerning the perceptions of inadequate reporting culture in the past, the literature also identified some barriers to reporting incidents which participants did not address or emphasise as strongly, particularly the fear of litigation, which featured in Byrne and Bury (2018), Burrell, Noble and Ridsdale (2012), Evans et al. (2006) and Jennings and Stella (2011). Some participants did mention litigation and that it is increasing as patients are perceived as taking less responsibility for their care. However, many participants emphasised that the only time they would get into trouble with their Ambulance Service NHS Trust, was for hiding a mistake

they made, and so they did not let the fear of litigious patients prevent them from reporting incidents, signifying a healthy reporting culture.

As demonstrated above, participants discussed the historical reporting culture in the NHS Ambulance Services, where there was a substantial amount of evidence in the broader literature supporting the perceptions of participants that the past reporting culture was poor, as well as the perceived barriers which prevented the reporting of incidents. However, participants also described how the reporting culture in the NHS Ambulance Services had recently undergone a large-scale shift, where blame culture is seen as increasingly minimal or non-existent, and the rate of reported incidents has risen considerably as a result. Participants representing all three Ambulance Service NHS Trusts and organisational levels felt that the reporting culture in the NHS Ambulance Services had transitioned away from its organisational and cultural legacy. This legacy, which will be expanded on within *Organisational Culture*, was perceived as contributing to the poor historical reporting culture; however, the historical remnants from this legacy were perceived as diminishing. According to participants, the prominent issues referenced as preventing the reporting of incidents were addressed by the NHS Ambulance Services, including with the introduction of a robust reporting system, as well as increased support and encouragement for staff reporting incidents.

As mentioned earlier, Kirk et al. (2018) concluded that there is limited evidence of a transition away from a blame culture to an open and positive reporting culture in the NHS Ambulance Services, and so the findings of this research are relatively novel. While original, they directly conflict with the literature discussed earlier, as well as data from NHS Staff Surveys, which have identified that there is still a substantial proportion of staff who believe they are not treated fairly by their organisation after they report an incident. For example, according to results from the NHS Staff Surveys, in 2018, 47 percent of staff in the NHS Ambulance Services answered that their '*organisation treats staff involved in an error, near miss or incident fairly*', indicating that a majority of respondents feel that their organisation mistreats staff following an incident, thus underscoring an existing blame culture (NHS Survey Coordination Centre, 2018). However, while the sample size in the NHS Staff Surveys is substantial, the results may be limited by the quantitative methodological approach of the survey, as it is arguably unable to capture the complexity of perceptions concerning reporting culture adequately. For example, NHS Staff Surveys would miss more



nuanced views where respondents perceived that staff may still be mistreated in some areas, but that the reporting culture has improved overall, while semi-structured interviews could explore and probe this topic in-depth (Barriball and While, 1994; Percy, Kostere and Kostere, 2015).

While the findings of this study are not entirely consistent with the results of the 2018 NHS Staff Surveys, recent trends suggest that a rising percentage of staff feel that they are treated fairly for reporting incidents, highlighting an overall consistency with the findings from this study. In particular, results from the NHS Staff Surveys demonstrate a significant improvement from 2017 onwards, resonating with the responses of participants who described a very recent shift within the last few years (NHS Survey Coordination Centre, 2018). Although it may be perceived as improving, supporting the findings of this study, as well as the document review and analysis of NHS Trusts by Fisher et al. (2015), which found that NHS Trusts were attempting to improve incident reporting, it is essential to reiterate that the results from the NHS Staff Surveys do not portray the NHS Ambulance Services as blame-free as suggested by most of the participants. Beyond the NHS Staff Surveys, recent research by Kirk et al. (2018) took place within the NHS Ambulance Services and found that paramedics believe that there is still a culture of blame. However, the data for this project was collected from eleven paramedics in the English NHS Ambulance Services from 2015 to 2016, and they did not canvass the perceptions of staff from any other organisational levels or in more than one Ambulance Service NHS Trust.

In line with the literature discussed earlier, which suggested the need for more robust reporting tools, the Ambulance Service NHS Trusts have recently introduced Datix®, an electronic incident reporting system. However, while the NHS Ambulance Services use Datix®, it appears that the individual Ambulance Service NHS Trusts did not adopt Datix® concurrently. For example, in Yorkshire Ambulance Service NHS Trust, Datix® was introduced in 2013, while in the London Ambulance Service NHS Trust, it was first utilised for risk register management in 2015 (Care Quality Commission, 2017a; Yorkshire Ambulance Service NHS Trust, 2018). Despite the staggered adoption across NHS Trusts, participants considered Datix® to have directly led to a significant rise in the number of patient safety incidents being reported by staff, as reporting incidents became easier and the reporting culture became more open as a result. However, participants speculated that the spike in the number of reported incidents was primarily a result of increased reporting

due to Datix® replacing the previous paper-based reporting mechanism, rather than an actual rise in the number of incidents occurring. This perception may be supported by the figures from the National Reporting and Learning System (NRLS), which recorded a substantial and recent spike in the number of reported patient safety incidents, as documented in Table 5. Participants suggested that the online system overcame some of the communication issues raised by infrastructural and workforce resources, as staff were no longer required to return to the station to complete incident reports and could report incidents remotely in between jobs. The literature supported this finding that the increased accessibility and ubiquitous use by staff opened the culture up and increased incident reporting rates (Braithwaite et al., 2010; Bolsin et al., 2005; Parmelli et al., 2012; Verbakel et al., 2015).

Although Datix® has made reporting easier for staff, participants reported that there are still some communication issues presented by the infrastructural resources, namely the outdated IT capabilities of the NHS Ambulance Services. Participants expressed that they do not have a tablet or smartphone within their ambulance which an incident could be reported remotely through a streamlined app or website, and instead have to call their team leader to request that they report an incident on their behalf. Participants viewed this as an additional burden to reporting, stating that the process could be made more efficient with better use of technology. As described earlier, the inadequacies of a reporting system present barriers to reporting, and while reporting was perceived to have improved significantly after the paper-based form and process was replaced, it was apparent that there was still substantial room for improvement.

Beyond the reporting infrastructure, participants also noted that the reporting culture had been improved as the NHS Ambulance Services had moved away from some elements of their organisational and cultural legacy discussed earlier. Participants emphasised that the NHS Ambulance Services are now more encouraging and supportive of staff, which they viewed as opening the culture and resulting in increased incident reporting. While mentioned by some participants, predominantly at the executive and management levels, it was expected that a significant shift occurred following large nationwide initiatives to improve reporting culture, potentially resulting in more favourable perceptions towards reporting within their organisation. For example, the Freedom to Speak Up was recently introduced, a review which provided suggestions for improving the reporting culture in all

NHS care settings, including the NHS Ambulance Services (Collier and Mahoney, 1996; Francis, 2015). As a result of the Freedom to Speak Up, the role of Freedom to Speak Up Guardian was implemented, where individuals working in each of the ten English Ambulance Service NHS Trusts act in a capacity which encourages staff to report as well as provides support through the process (Care Quality Commission, 2019). By offering staff support for reporting outside of the normal channels, it is anticipated that they are then more likely to report incidents and contribute to a more positive safety climate, as the negative impact of the hierarchical structure in the NHS Ambulance Services, present in the past and representing barriers between staff, is reduced.

Communication disseminated from the Ambulance Service NHS Trusts to staff around these initiatives, including through bulletins, posters and emails, conveyed to staff that reporting incidents was now a requirement, as well as that there was no need to worry about punishment. Within the Ambulance Service NHS Trust headquarters, where interviews were conducted, it was apparent that these reporting initiatives had a significant presence as they were advertised on large standalone posters throughout the buildings. However, during interviews in smaller and more rural stations, there was typically a single noticeboard with over a dozen bulletins pinned, where reporting initiatives were not as pronounced or even included. Unsurprisingly, it was noted that those who worked within the Ambulance Service NHS Trust Headquarters, referenced these initiatives more frequently, including management and executive-level participants, as well as those who worked in the emergency operations centre (EOC). Operational participants from more geographically rural stations, on the other hand, appeared less aware of these initiatives, while remaining positive overall concerning the state of the reporting culture within the NHS Ambulance Services.

The findings from this study are some of the first to document a perceived transition away from a blame culture within the NHS Ambulance Services to a reporting culture which is open and positive, directly conflicting with recent literature, as well as figures from the NHS Staff Surveys as discussed above. Therefore, it is important to raise the possibility that the shift has not been as significant or positive as perceived by participants, due to the representativeness of the sample. While the perceptions were canvassed from a broad range of staff representing three organisational levels from three Ambulance Service NHS Trusts, the sample in this qualitative study does not claim to be, nor is it wholly

representative of over 35,000 staff in the NHS Ambulance Services. For example, within NHS Trust T3, the operational-level participants were predominantly younger and degree educated, while one represented an older and less educated demographic, which will be expanded on within the following Strengths, Limitations and Recommendations Chapter (Chapter 6).

Almost all participants felt that the reporting culture had improved from its former state. However, one older senior paramedic without a university degree and with nearly three decades of experience felt that the blame culture remained a prominent feature in the NHS Ambulance Services and that Datix® was primarily used for '*...grassing out everyone else*' [C5-T1]. This participant came from Ambulance Service NHS Trust T1, where the participants were the most experienced out of the three sampled NHS Trusts. Staff with more experience may be more likely to view the reporting culture negatively, as they have worked under an evident blame culture for a majority of their careers and still might not feel comfortable reporting errors. In contrast, younger and newer operational staff, who are educated about reporting incidents throughout their degree and during their induction programme, may not yet have been influenced by the organisational and cultural legacy discussed in the fifth dominant theme, *Organisational Culture*. A key feature of that legacy includes a culture of blame in the NHS Ambulance Services, and younger staff may, therefore, be more receptive to reporting errors compared to their more experienced and older colleagues. Some participants touched upon these concepts and stated that the younger paramedic workforce, due to both their undergraduate education and lack of exposure to the historical culture in the NHS Ambulance Services, exhibit more positive perceptions of reporting culture and patient safety than the rest of the staff. However, as the opinion and age of that senior paramedic discussed above was unique, it is unknown whether successfully recruiting and interviewing older and experienced clinical staff within the sample would have captured similar perspectives and highlighted a possible divide between older and younger operational participants.

While these findings do not have direct and immediate implications for patients, they do have extensive clinical relevance. In particular, it is speculated that the improved reporting culture will ultimately have a significant impact on the care that patients receive in the NHS Ambulance Services (Boysen, 2013; Nieva and Sorra, 2003). According to research by Pham, Girard and Pronovost (2013) and Edmondson (1996), an open and positive reporting

culture will lead to a higher number of patient safety incidents reported by staff. As discussed in the first chapter of this thesis, data from the National Reporting and Learning System (NRLS) has indicated that the number of incidents reported by staff within the NHS Ambulance Services has recently risen sharply and continues to increase within all Ambulance Service NHS Trusts in England (National Audit Office, 2017). If the rate of reporting by staff continues to grow as they become more receptive to reporting incidents, fewer events are likely to go unreported. Therefore, the NHS Ambulance Services can use the knowledge of these reported incidents to establish a heightened awareness of existing risks, thereby contributing to the development of a learning organisation (Anderson et al., 2013). These issues and risks can then be learned from and addressed to have a positive impact on the attitudes of staff and the care and treatment of patients in the NHS Ambulance Services (Anderson et al., 2013; Benn et al., 2009; Sujan, 2015).

## **5.5 COMMUNICATION**

The findings from this study demonstrate that communication is perceived to have a significant impact on patient safety and that communication issues arise predominantly from infrastructural and workforce resources. These resources include IT functionality, the use of multiple channels of communication, operational pressures, and the mobile and dispersed nature of the paramedic role.

In a fast-paced clinical environment like the NHS Ambulance Services, where paramedics are isolated in ambulances covering an entire city or region, effective communication concerning patient safety-related information between staff is understandably difficult. Participants from all three organisational levels were familiar with the communication challenges unique to their care setting, often emphasising that it ultimately had a significant impact on patient safety. In addition, participants were acutely aware that the paramedic role had become progressively more clinical, with staff expected to be capable of a variety of complex medical interventions and procedures, requiring in-depth clinical knowledge and continual updates to their skill sets (NHS England, 2013). Therefore, they stressed that communication was fundamentally integral to patient safety, as front-line staff may be practising out of date, or missing important patient information, without it, thereby presenting significant risks to patient safety.

Unsurprisingly, participants focussed on the communication challenges inherent within the NHS Ambulance Services, in particular, communicating effectively with front-line staff whom they do not see and who do not have the time to access or read information. As demonstrated in the findings, four major communication issues arose due to infrastructural and workforce resources, including the ineffective use of multiple channels of communication, outdated and ill-equipped IT infrastructure, operational pressures and the dispersed and mobile workforce. Participants perceived that issues stemming from infrastructural resources could be addressed. However, it was evident they understood that the underlying communication issues due to workforce resources were beyond their scope, as they were a result of the external pressures of demand and lack of funding. It was clear, therefore, that participants concentrated on solutions they perceived to be feasible and which were adapted to the current operational pressures staff are under, as well as the dispersed nature of their role.

While research has explored communication and its relationship to patient safety in other clinical settings, there is a significant lack of literature available concerning this issue within the ambulance and emergency services. Communication and its relationship to patient safety was first illustrated in the NHS Staff Surveys (Table 2), where only a fraction of respondents reported effective communication between senior management and front-line staff, as well as from NRLS data (Table 5), which highlighted that a high number of patient safety incidents were related to communication (NHS Improvement, 2018a; NHS Survey Coordination Centre, 2018). According to the results from the most recent NHS Staff Survey in 2018, communication between staff and senior management is still viewed as poor as only 29 percent of respondents felt there was effective communication between these two groups (NHS Survey Coordination Centre, 2018). While not an objective of this research, as it was not identified in the literature review as seen in Chapter 2, it became a prominent issue following the responses of participants, who focussed on communication and emphasised its importance to patient safety. Therefore, it was felt that the perceptions of intra-communication of staff in the NHS Ambulance Services and its relationship with patient safety should be explored. These findings arguably provide the first in-depth exploration of the perceptions of communication and its relationship to patient safety, including perceived barriers and solutions, across all organisational levels in the NHS Ambulance Services, demonstrating the significance of the study.

Prior to this study, limited qualitative evidence existed which explored the perceptions of communication and its impact on patient safety across a range of organisational levels within the NHS Ambulance Services, thereby presenting difficulties in comparing these findings with the broader literature. For example, systematic and scoping reviews by Bigham et al. (2012) and Fisher et al. (2015), respectively, identified that there was not a substantial amount of literature around communication in the ambulance and emergency services, and that most of it concerned inter-communication between care settings during patient handover, rather than intra-communication between ambulance service staff. As a result of this gap in the literature, Fisher et al. (2015) suggested that future research should explore how knowledge transfer is best achieved with the mobile, outspread workforce in the NHS Ambulance Services, as well as how communication can ultimately be improved to have a positive impact on patient safety.

As mentioned earlier, participants representing all three organisational levels felt that communication and patient safety were strongly aligned, where any changes to communication would consequently impact patient safety. Participants, from staff in the EOC to executives, regularly referenced how more effective communication would lead to improvements in patient safety specific to their position and past experiences. For example, a dispatcher expressed that their contribution to improving the safety of patients is that they are as informative as possible concerning the patient condition when communicating with paramedics. In addition, a management participant referenced how they address any patient safety concerns that are communicated upwards to them from the front-line, thereby improving patient safety. As the interpretation and understanding of patient safety by participants varied so widely according to organisational levels, as demonstrated in *Varied Interpretation of Patient Safety*, it was unexpected that participants across all three levels would perceive that communication had an impact on patient safety. In particular, it was not anticipated that operational level participants would think that communication and patient safety were interlinked, as they were more focussed on human errors rather than those caused by underlying organisational and systems issues. However, as their job requires that they rely on constant communication throughout their shifts, it is understandable that they would be more aware that communication can have a considerable influence on the safety of patients.

The literature directly supported these findings, as there is substantial evidence demonstrating a strong connection between patient safety and team communication in healthcare, thereby indicating that effective communication is essential in preventing patient safety incidents and fostering an environment more conducive to learning from mistakes and errors (Brock et al., 2013; Burgener, 2017; Childress, 2015; Eisenberg et al., 2005; Illingworth, 2015; Institute of Medicine, 1999; Leape and Berwick, 2005; Leonard, 2004; Nagpal et al., 2012; O'Daniel and Rosenstein, 2008). Research has identified that an environment with prevalent ineffective communication can have a disastrous impact on patient safety, as poor team communication was identified as the underlying factor of 66 percent of all medical errors reported to the Joint Commission from 1995 to 2004 in the United States (O'Daniel and Rosenstein, 2008). While the literature in the ambulance and emergency services is less robust, research by Fisher et al. (2015), Greenwood and Heninger (2010) and Wankhade (2012) appears to suggest that team communication is as fundamentally crucial to patient safety in this care setting as it is in the wider healthcare environment. Effective communication across subcultures, or organisational levels in the NHS Ambulance Services, was identified by Wankhade (2012) as having a positive impact on the learning of an organisation, thereby improving patient safety. The research by Wankhade (2012) resonates with the findings from this study, as participants routinely discussed how concerns identified at the front-line level could be communicated upwards to higher-level staff, where they would be addressed, and improving patient safety as a result. However, while participants noted that this example was theoretically possible, they regularly added that it was unlikely given the current communication challenges they face in the NHS Ambulance Services, which cause some patient safety concerns to go unexpressed by operational staff.

Beyond the perception that communication is closely associated with patient safety more generally, participants also mentioned existing communication issues raised by the workforce and infrastructural resources and how they presented barriers to effective communication in the NHS Ambulance Services. Some of the obstacles raised by participants are specific to the ambulance and emergency services, which made it challenging when comparing the findings to hospitals and primary care, where the focus of the majority of the existing literature lies. In particular, participants emphasised how workforce resources presented obstacles to communication, specifically, the operational pressures on staff and the dispersed and mobile nature of the paramedic role. This finding



was unsurprising, as it is clear that the rise in demand has had a profound impact on the perceptions of patient safety by staff, including communication. To elaborate, in the past, when front-line staff would complete a job, they may have had some free time before the next patient, where they could return to their station or catch up on trust communication within their vehicle. However, with the present level of demand, as soon as a job 'clears', or finishes, front-line staff are immediately sent to the next patient and no longer have the luxury of time to read until their shift ends. The finding that demand pressures were so substantial that staff had no time to read information was supported by O'Hara et al. (2015), which was also conducted in the NHS Ambulance Services. As the data were collected for O'Hara et al. (2015) from 2012 to 2013, this issue appeared to be relatively unchanged five years later, and it is expected to worsen given the projected future increases in demand (National Audit Office, 2017; Newton, 2013).

According to participants, as they do not have adequate IT infrastructure for effective communication within their ambulances, stations are where information is most accessible for staff, including on notice boards, as well as on Ambulance Service NHS Trust computers. However, exacerbated by demand pressures, front-line staff often do not return to their stations until the end of their shift and therefore never see this information. For example, during the process of data collection within smaller stations, there were typically couches, chairs, a television and a kitchen, implying that staff would have time to discuss work with colleagues, catch-up on trust communication, and rest while waiting for the next 999 call. However, it was not uncommon for there to be no one within these stations besides the single participant, as they would often request an interview just before, or following, their shift. As staff rarely return to their stations during a shift, participants from all organisational levels expressed that there is minimal to no face-to-face contact between front-line and management staff. This finding was supported by the latest results of the NHS Staff Surveys, which demonstrated that only approximately 29 percent of respondents reported that communication between senior management and staff was effective (NHS Survey Coordination Centre, 2018). Understandably, a significant concern of participants was that staff are then entirely isolated from any communication during work and can only catch up and review any missed NHS Trust communication during unpaid hours, which participants perceived as highly unlikely and an unreasonable expectation. Although this issue has become more evident in recent years due to the increasing demand, it was clear that the communication issues presented by the geographically dispersed health professional

workforce have always existed and are well supported by the literature (O'Hara et al., 2015; Schooley et al., 2010; Weller, Boyd and Cumin, 2014).

While all participants agreed that there was no time for front-line staff to read communication during work hours, there was some discordance in their responses, which included conflicting opinions concerning the expectation of front-line staff to keep themselves abreast of NHS Trust communication outside of work hours. It is anticipated that requiring that staff access and read the information outside of working hours is unfeasible, and given the current attrition rates, it is only expected that job satisfaction would worsen and turnover would increase (National Audit Office, 2017). However, as the underlying communication issues caused by the workforce resources are expected to remain unchanged and may worsen, it is clear that the communication issues stemming from infrastructural resources will need to be adapted and utilised to improve communication between staff in the NHS Ambulance Services.

Beyond the communication issues posed by the workforce resources, as detailed above, it was clear that infrastructural resources also presented barriers to staff communication, for example, the ineffective use of multiple channels of communication and the inadequate IT infrastructure. Participants perceived that the inefficient use of channels of communication made relaying information concerning patient safety more challenging. As Ambulance Service NHS Trusts send information out over several different mediums, including posters, emails, bulletins, and trust social media pages, it was understandable that staff would not continually check all channels and would instead only use their preferred channels for the majority of communication. Unsurprisingly, the solution participants regularly expressed was to send out all communication via every channel to ensure that more staff would receive and access this information. This finding was heavily supported in the literature, which found that utilising multiple pathways to disseminate information helped increase staff exposure to messages where they are more likely to see them (Brashers, 2002; Kotler, Roberto and Lee, 2002; Kreps and Sparks, 2008; Snyder, 2007). While potentially tedious for the staff responsible for disseminating information, it was expected that adapting communication to fit each channel would be more achievable than changing the communication preferences of staff.

Participants also focussed extensively on the communication issues raised by the outdated and ill-equipped IT infrastructure used in the NHS Ambulance Services. According to participants, there was a significant lack of funding for updating the technological capabilities related to communication, and even when their organisation invested funds in improving communication, it was ultimately deemed not fit for purpose by staff. For example, Ambulance Service NHS Trust T3 disseminated tablets to all employees. However, at the time of this study, they could not support emails, incident-reporting, nor ePRFs, and so many participants admitted to using their personal smartphones instead, as they were more suited to their needs as mobile practitioners. This finding resonates with research by Paul et al. (2008), who identified that participants perceived that their communication devices had limited functionality and were therefore not fit for purpose within their healthcare environment.

Directly related to the communication challenges posed by the mobile nature of the role, participants expressed how the implementation of adequate IT infrastructure is necessary to improve communication with front-line staff while on ambulances, as they have no longer have any contact with higher-level staff (O'Hara et al., 2015; Schooley et al., 2010; Weller, Boyd and Cumin, 2014). While participants from all three organisational levels and Ambulance Service NHS Trusts advocated for increased investment in the IT infrastructure of the NHS Ambulance Services, it is possible that this was directly related to their age. Technological solutions were raised far more frequently by younger participants, suggesting an association between age and advocating for technological improvements. Therefore, the channel preferences of staff may also be age-dependent, as participants often noted that older staff were viewed as more reticent to utilise emails or social media for accessing trust information, while younger staff adopted these mediums quickly. It is expected that younger staff may feel more comfortable with these communication tools because they had grown up with this technology and were more accustomed to using it in the NHS Ambulance Services.

This finding resonates strongly with similar research, albeit surprisingly minimal, which indicates that adequate IT infrastructure can be utilised to improve communication amongst staff (Anwar and Shamim, 2011; Johnston et al., 2015; Paul et al., 2008; Schooley et al., 2010). However, while viewed as necessary, many operational and management-level participants did not think that the Directorate would be willing to spend money to bolster

their IT infrastructure for communication purposes, which may resonate with Fisher et al. (2015), who found that communication issues were a low research priority for medical directors within the NHS Ambulance Services. Several participants referenced the many barriers to improving IT infrastructure, including the cost, organisational change and time, and some participants even mentioned how the NHS is not an attractive place to work for anyone with a computer science background, which they viewed as representative of their current technological situation (Cresswell and Sheikh, 2013; Lluch, 2011).

While the relevant literature supported the findings, there were some communication barriers raised in the literature which were not emphasised frequently by participants in this study. Research by Rabøl et al. (2012), Sutcliffe, Lewton and Rosenthal (2004) and Weller, Boyd and Cumin (2014) demonstrated that healthcare staff perceived that hierarchical structures within their health settings, prevented effective team communication. As covered in *Reporting Culture Shift* and *Organisational Culture*, participants referenced the hierarchy within the NHS Ambulance Services as preventing incidents from being reported and as leading to a fractured organisational culture in the past. While executive-level participants were concerned that operational-level staff might not raise issues or concerns when in the presence of higher-level staff, this was not confirmed by operational-level participants, whom all reported feeling comfortable reporting incidents and voicing concerns. However, most participants did not explicitly discuss the hierarchy within the context of barriers to staff communication between organisational levels. While remnants were perceived as still existing in some areas, as will be discussed in the following dominant theme, *Organisational Culture*, many participants reported that the hierarchy was primarily a feature of the past. Therefore, it is possible that they viewed the hierarchy as a barrier to communication historically, and felt that it did not represent a barrier in the present state of the NHS Ambulance Services. In addition, front-line participants appeared cognisant of the challenges of disseminating communication upwards due to the minimal number of staff in higher-levels, rather than as a result of executives being dismissive of messages from the front-line. As operational staff do not regularly see colleagues from other organisational levels due to the pressures from the rising demand, it is reasonable to assume that the communication issues raised by the hierarchy would be less pronounced in the current NHS Ambulance Services.

As referenced previously, there was a lack of research concerning communication and its relationship with patient safety in the NHS Ambulance Services, and this study contributes some of the first evidence to the literature. Participants appeared quite assured that their suggestions would address the intra-communication issues raised by the workforce and infrastructural resources. However, it is also likely that some proposed technological solutions will not have the intended impact or improve communication and patient safety as much as participants thought. For example, one participant noted how the Scottish Ambulance Service had adopted an electronic patient report form (ePRF) and that it did not help as much as they had previously hoped, while participants in this study expressed how ePRFs would be a panacea for communication and patient care in the NHS Ambulance Services. In addition, many participants in Ambulance Service NHS Trusts T1 and T2 wanted to have tablets, such as an iPad, on each ambulance, often detailing how it would improve communication between staff and make patient safety-related information more accessible. However, as previously stated, NHS Trust T3 had recently issued tablets to staff, where they were largely determined to be relatively useless by participants, as they did not yet have the front-line functionality staff require, resulting in inadequate IT infrastructure. Linking back to age, younger operational-level participants in NHS Trust T3 expressed how they never take the tablet out of its case and instead use their personal smartphone devices for work, as they found them more useful.

As participants would frequently refer to the past and mention how they used to have more time to access and digest NHS Trust communication before the rate of demand rose so sharply, it would, therefore, be interesting to replicate this study when or if demand ever becomes manageable. However, as it is expected that demand will continue to increase, it may be more realistic to instead replicate this study within a country where the ambulance or emergency services are experiencing a lower rate of demand. If front-line staff had more time, as well as robust IT infrastructure to access communication in their ambulances, it would be useful to evaluate if participants would consider that communication issue sorted, or if they would concentrate on something previously unmentioned. For example, many participants stated that face-to-face communication was the ideal way to communicate with staff. However, they always added that it was not possible given the barriers presented by the operational pressures, and instead proposed alternative solutions they viewed as more feasible. Without the pressures of demand dominating their concentration, participants may

have raised communication issues which were found in the relevant literature, but were not emphasised in this study.

The findings from this research have extensive clinical relevance, as they contribute some of the first evidence in the literature documenting communication issues raised by infrastructural and workforce resources in the NHS Ambulance Services. Research has shown that a lack of communication between staff can foster an environment where patient safety incidents are more likely to occur (Brock et al., 2013; Burgener, 2017; Eisenberg et al., 2005; O'Daniel and Rosenstein, 2008). Therefore, identifying barriers to communication is essential, so that proposed solutions specific to the NHS Ambulance Services can then be developed and implemented to have a positive impact on the safety of patients. If the ineffective use of multiple channels of communication and antiquated or ill-equipped IT infrastructure are addressed according to the suggestions of participants, it is expected that intra-communication in the NHS Ambulance Services and its impact on patient safety will improve considerably. For example, front-line staff will then be more aware of any updates regarding trust clinical updates or other trust information, resulting in more current and safer practice.

Increased communication between organisational levels is also expected to influence patient safety, as it will aid in opening up the culture and help reduce any existing historical remnants of the hierarchical structure which the broader literature described as presenting barriers to communication. According to Wankhade (2012) and Schein (1996), open communication across the three organisational levels of staff would facilitate understanding of each other's roles and would help move away from a culture of blame, which had been demonstrated in the previous dominant theme, *Reporting Culture Shift*.

## **5.6 ORGANISATIONAL CULTURE**

The findings from this research indicate that organisational culture is believed to have a significant impact on patient safety and that harmful historical remnants of the past organisational and cultural legacy still exist within the NHS Ambulance Services. Participants expressed that by becoming a learning organisation, the organisational culture can be improved to have a positive impact on the safety of patients.

As detailed in the Introduction Chapter (Chapter 1), the NHS Ambulance Services have undergone several significant and large-scale changes following their integration into the NHS. One of the most significant advances was the progression of the paramedic role from being seen as 'ambulance drivers' to extremely competent practitioners with an extensive range of clinical knowledge and skills (Blaber, 2008; Fisher et al., 2015). However, according to participants, these organisational and structural changes have not yet improved upon all aspects of the historical organisational culture, as historical remnants have remained which were perceived as harmful and a product of the command and control origins of the NHS Ambulance Services. Therefore, participants felt that a persisting *Organisational and Cultural Legacy*, including a focus on time targets and performance culture, an aversion to risk and a hierarchical structure of staff, was still present in the NHS Ambulance Services. It was clear that these historical remnants have had a lasting impact on the current organisational culture, staff from all organisational levels, and ultimately, the safety of patients. In particular, it was not anticipated that operational level participants would think that communication and patient safety were interlinked, as they were more focussed on human errors rather than those caused by underlying organisational and systems issues. However, as their job requires that they rely on constant communication throughout their shifts, it is understandable to assume that they would be more aware that communication can have a considerable influence on the safety of patients.

While participants emphasised that the reporting culture had recently experienced a substantial shift, they perceived that the organisational culture had improved only slightly over the same period. Participants suggested that organisational culture requires a much longer time to change, as it encompasses the collective views, behaviours and norms of all staff in the NHS Ambulance Services (Wilson, 2001). It was also suspected that the *Organisational and Cultural Legacy* has remained ingrained throughout the service, as the older staff who have worked entirely under its influence, have perpetrated and continued its presence. However, the present influx of degree-educated newly-qualified paramedics, who have not experienced working under the prevailing organisational and cultural legacy, are likely more immune to its influence and are driving some of the shift. Participants also emphasised that the organisational culture could be improved by becoming a learning organisation, where suggestions included providing continued education and training for all staff, opening the infrastructure to flatten the hierarchical structure and encouraging

leadership at all organisational levels. As the literature in this area is quite minimal, Fisher et al. (2015) suggested that future research should explore how organisational culture influences patient safety, as well as how it can be continuously improved. Therefore, this study provides some of the first evidence of how organisational culture impacts patient safety in the NHS Ambulance Services, as well as how it can be improved by becoming a learning organisation, thereby highlighting the significance and importance of these findings.

Similar to *Communication*, participants from all organisational levels appeared quite aware of the influence that organisational culture has on patient safety within the NHS Ambulance Services. Most surprisingly, operational-level participants were mindful of its impact, which was unexpected as they interpreted patient safety as relating to human error, rather than as a result of organisational and systemic factors. However, as they all appeared acutely aware of and impacted by hierarchical structures, the emphasis on time targets and other influences which stem from higher levels, it is logical that they would be knowledgeable of the relationship between organisational culture and patient safety. While operational participants were conscious of its influence, it did appear that higher-level staff were more aware of organisational culture as a whole, potentially as their role has substantial influence through the procedural and structural changes they enact. It was clear that a small number of participants did have difficulty with the concept of organisational culture, particularly at the operational level. However, their uncertainty was understandable, as concepts like patient safety culture, reporting culture and organisational culture have some overlap and can be challenging to differentiate between, especially if previously unfamiliar as some participants were before the interview.

As participants primarily referenced the historical remnants from the past organisational culture, it is anticipated that more experienced participants, who had worked for the NHS Ambulance Services for a longer period, had a firmer grasp on its presence and how it influences patient safety. For example, some younger operational-level participants referenced how they had never seen any evidence of the organisational and cultural legacy, but that their more experienced colleagues discussed them at length, indicating that they are more evident for some subgroups of staff. The finding that organisational culture had an impact on patient safety was widely supported by the broader literature, which has indicated that in addition to changes in structural and procedural aspects, significant



improvements in organisational culture must also be realised to affect patient safety positively (Braithwaite et al., 2017; Curry et al., 2017; Kaufman and McCaughan, 2013; Knowles et al., 2018; Mannion, Konteh and Davies, 2009; Scott et al., 2003). However, while the literature concerning organisational culture and its impact on patient safety is quite robust in other care settings, it remains quite minimal within the ambulance and emergency services (Fisher et al., 2015).

Participants perceived that historically, the NHS Ambulance Services were focussed primarily on meeting response time targets, or getting to patients within a set amount of time dependent on the patient's condition, and were not as concerned with patient safety. While more evident in the past, participants, predominantly at the executive-level, felt that a focus on time targets remained prominent within the NHS Ambulance Services and that it still represented a priority and pressure. It was clear that executive-level participants emphasised response time targets more frequently than participants from the other levels, which was expected as they are responsible for their NHS Trust's performance and would be more aware of these measures. One executive-level participant even referenced correcting a member of the Directorate, who in a meeting commented that all paramedics prioritise time targets. This particular participant viewed this comment as wholly inaccurate as front-line do not appear to let it impact their work at all and instead focus on patient care. While time targets continued to be prioritised, all participants acknowledged that it was a hindrance to patient safety and represented a poor measure of performance, which they felt should be related to patient outcomes instead. In 2017, these measures were updated by NHS England to reflect a new model of care, where patients most at need are prioritised (NHS England, 2019). However, problems remain with these measures, as they are not dependent on location, meaning that metropolitan cities and rural regions are weighted equally, where the time required getting to patients varies significantly. While it is unknown whether the impact of rising demand will require new measures going forward, it was clear that this finding was well-supported by similar research, as a focus on time targets and how it dominates organisational culture in the NHS Ambulance Services has been well documented in the literature (Fisher et al., 2015; Heath and Radcliffe, 2007; O'Hara et al., 2015; Price, 2006; Wankhade, 2011; 2012; 2018).

Beyond time targets, participants also discussed how the NHS Ambulance Services historically were utterly averse to any risk, where all patients were brought to the hospital,

regardless of their condition. Participants commented that bringing a patient to hospital removed any personal risk for paramedics, as the receiving hospital and team would then assume responsibility for the patient's care. While a prominent feature of the past, as this was previously the extent of the paramedic role, their profession has since undergone significant changes as they are now capable of performing increasingly complex treatments and do not need to bring every patient to the hospital. However, according to participants, while front-line staff are becoming less risk-averse as their clinical knowledge and capabilities increase, an aversion to risk is still prevalent in some subsets of staff. It was expected that this was somewhat associated with the age and clinical ability of the paramedic, as younger operational participants would discuss how their paramedic university degree has given them the confidence, knowledge and skills to treat a wide variety of patient conditions. As more inexperienced paramedics are often paired with an older or more experienced member of staff, these participants would reference how their older colleagues trained as a paramedic on a six-week course and that they would still bring patients to A&E, regardless of their condition. While most of the operational participants were younger within this study, some who were older and more experienced did mention how they would still bring all patients into A&E, as they were then not responsible if anything went wrong. One participant even provided an extreme example of conveying a patient who had stubbed their toe, as they would ultimately have been held responsible if the patient somehow died at home, regardless of how slight or insignificant the injury was perceived to be.

It was evident that operational-level participants mentioned an aversion to risk and how it continued to impact the organisational culture and patient safety more frequently than other organisational levels of staff. As operational staff are the ones who ultimately determine whether or not to convey patients to the hospital, it is reasonable to expect that participants from this level would be more aware of this historical legacy than higher-level staff who do not deal with these decisions in their roles. The continued risk aversion by front-line staff was a finding grounded in the broader literature, as similar research within the NHS Ambulance Services has demonstrated an aversion to risk by front-line staff (Ingram, Rees and Sujana, 2019; O'Hara et al., 2015; O'Cathain et al., 2018, Wankhade 2011; 2016). This finding is also supported by Knowles et al. (2018), who suggested that organisational culture was related to rates of non-conveyance in the NHS Ambulance Services, which was confirmed by the participants in this study.

As emphasised by participants, another historical remnant from the organisational and cultural legacy of the NHS Ambulance Services was the remains of the hierarchical structure of staff. Many participants noted how the early beginnings of the services were rooted in a command and control culture, commonly drawing parallels with the military, as staff were ranked according to their organisational level, which was made evident by their uniform and rank markings, or pips. This palpable hierarchy previously had significant negative implications, as staff would not interact with colleagues from other organisational levels, leading to a separation in perceptions and culture, which perpetrated divisiveness and a lack of collaboration and support. The hierarchical structure was perceived as impacting many areas of patient safety, as noted in *Reporting Culture Shift*, participants felt that in the past they could not report incidents or raise patient safety concerns due to the expectation of punishment. While participants believed that the hierarchy in the NHS Ambulance Services had been minimised, it was clear that some aspects of it remained present and continued to have an impact on staff. For instance, executive-level participants often raised recent examples of situations where staff behaviour visibly changed once they realised they were in the presence of an executive or high-level manager. Some executive-level participants commented that this had negative implications for organisational culture and patient safety, as they perceived that operational staff would not identify areas of concern or if mistakes have been made, while in the company of the higher-level staff. One participant commented that when leaving to go and work with front-line staff that they will take the pips off of their uniform, or wear casual clothing, as it removes any barriers imposed by the perceived hierarchy.

Although all executive-level participants were aware of the impact that their role has on front-line staff and appeared eager to remove this as a feature of the NHS Ambulance Services, according to participants, particularly those from the EOC, the hierarchical structure was still quite pronounced within senior management staff. Some management and operational-level participants raised how this particular group would always wear their uniforms and pips while working, and they were perceived as purposefully exuding their rank and superiority over operational staff by being unapproachable, abrasive and providing no encouragement or support. However, participants acknowledged that this subset of staff were highly experienced and typically close to retirement, working for decades under the hierarchical model and knew of no other management style. In addition, the rank culture appears evident in other areas of the NHS Ambulance Services, as some Ambulance

Service NHS Trusts have published online guides which explain the rank markings of staff, suggesting that this issue is still present. While other historical remnants left over from the organisational and cultural legacy were discussed more frequently by participants from certain organisational levels, the previous and currently existing hierarchy of staff was touched upon by participants across all levels. It is suspected that participants from the three organisational levels were aware of this hierarchy, as it has a definite impact on all staff. For example, front-line staff may feel that they are unimportant or not listened to, while executive-level staff are aware of this perception and aim to minimise it within the NHS Ambulance Services.

Similar to literature concerning organisational culture and patient safety in the ambulance and emergency services more generally, there is minimal available research which has explored the perceptions of a hierarchy within this setting (Charman, 2015; Fisher et al., 2015; Wankhade, 2009; 2012). However, while minimal, the findings which indicate the existence of a hierarchy and its impact on the organisational culture within the NHS Ambulance Services does resonate with Wankhade (2012), who identified three separate cultures in the NHS Ambulance Services, similar to the executive, management and operational-levels designated in this study. Wankhade (2012) demonstrated that a lack of alignment between these levels could lead to rivalry or competition, representing barriers to collaboration, trust and bonding between staff, all of which negatively impact patient safety (Martin, 2002). This finding resonates with the findings of this study, as participants referenced an 'us and them' type of culture between front-line staff and those from the management and executive levels. The literature demonstrating the impact of organisational culture on patient safety is more robust in other care settings, which has shown that pronounced hierarchies are associated with poorer safety climates and negatively influence the performance of healthcare organisations, and therefore patient safety, striking parallels with the perceptions of participants in this study (Gillespie et al., 2013; Hartmann et al., 2009; Karsh et al., 2006; Singer et al., 2009b; Speroff et al., 2010; Walton, 2006).

In addition to citing the harmful historical remnants of the organisational and cultural legacy of the NHS Ambulance Services, participants also regularly provided recommendations that would improve the organisational culture to have a positive impact on patient safety. Unsurprisingly, it appeared that the suggestions of participants corresponded to and directly

targeted each of the historical remnants from the organisational and cultural legacy. Participants suggested flattening the hierarchy to open the infrastructure for a more supportive environment, offering continued education and training for all staff, and establishing leadership at all organisational levels to facilitate these changes. However, while participants identified measures to improve organisational culture, they were also very realistic about the likely challenges; in particular, the resources required and time they would take to be fully operationalised.

As a lack of training was identified as representing a risk to patient safety, as discussed in the second theme, it was expected that participants would be in favour of continued training and education for all staff to improve patient safety. Participants, predominantly at the management-level, emphasised that continued learning from training, educational courses and participating in research, had shifted their perspectives entirely on patient safety and they wished that all staff could have those types of opportunities. For example, one advanced paramedic prefaced their responses by acknowledging that they had a different perspective on patient safety due to taking part in a large-scale research project exploring the measuring and monitoring of patient safety. In addition to increasing the skills and knowledge of staff while reducing the likelihood of skill decay, participants emphasised that continued learning would also improve the overall organisational culture, as staff would then be more open to learning and improving the services while they become more aware of patient safety and its importance. This finding supports the wider literature, which has found that broad organisational approaches to learning are required (Brock et al., 2013; Edwards, 2017; Lukic, Margaryan and Littlejohn, 2010; Sujan, 2015; Sujan and Furniss, 2015). However, while proposed by participants, they all acknowledged how increased training and education would only be feasible if the level of demand becomes manageable, which they viewed as highly unlikely. Specifically, participants referenced the rising pressures of demand and how it is incredibly unlikely that additional training and education would be offered to staff, as demand is an underlying reason for the reduction in training in recent years, as seen in *Significant Patient Safety Risks*.

As participants noted that there was a persisting hierarchical structure, or rank culture, within the NHS Ambulance Services, which impacted patient safety, it was therefore expected when they suggested flattening the hierarchy to open the infrastructure. According to participants, eliminating the remnants of the military-style hierarchy would break down

perceived barriers between staff, thereby increasing collaboration where staff could share information and learn from each other, no matter their organisational level. Unlike continued learning as discussed above, reducing the hierarchy appears entirely within the remit of the NHS Ambulance Services, as participants implied that progress had been made and that the hierarchy is no longer as defined as it was in the past. However, a PhD thesis by Wankhade (2009) identified that staff aimed to reduce the hierarchy within the NHS Ambulance Services, indicating that this continues to remain a prominent issue approximately a decade later. As demonstrated earlier, there is a significant paucity of research which explored the perceptions of a hierarchy within the ambulance and emergency services. However, similar research in other care settings found that an absence of an evident hierarchy and more collaborative staff were associated with a more positive safety climate and improved patient care, supporting this finding (Cooper et al., 2007; Sujun, 2015).

Lastly, participants, predominantly at the executive and management-levels, emphasised that leadership at all organisational levels of the service was needed to ensure that patient safety is a core focus and value of the NHS Ambulance Services, as well as to flatten the hierarchy and encourage organisational learning. This finding supports the broader literature, as research has found that effective leadership can improve the organisational culture and patient safety as a result (Cooper et al., 2007; Fisher et al., 2015; Haxby, Hunter and Jaggar, 2010; Kaufman and McCaughan, 2013; Swuste and Arnoldy, 2003). Participants felt that while leadership existed within higher levels of staff, that it significantly lacked at the operational level, resulting in a missed opportunity for improving the organisational culture. As mentioned by many executive-level participants, there are too few of them to realistically and effectively direct and lead the thousands of front-line staff in each NHS Trust. These participants suggested that the leadership model is changed from top-down, as it has historically been, to a distributed model which adequately reaches all staff (Pearce, 2003). Similar to flattening the hierarchy, it is expected that empowering clinical staff to become leaders is entirely feasible. For example, parallels can be drawn to the Freedom to Speak Up Guardian role, where designated staff were trained to provide support and guidance to staff across each of the ten Ambulance Service NHS Trusts in England (Care Quality Commission, 2019). It is expected that a similar model could be used for leadership within the NHS Ambulance Services, as operational members of staff could be selected and trained to then assume a leadership role. While emphasised frequently by the

executive and management-level staff, whose positions arguably require a natural element of leadership, it was anticipated that leadership was not a focus of operational-level participants, as it may not be seen as an aspect of their roles.

Similar to the literature concerning the ambulance and emergency services more generally, the research which explored the perceptions of staff around organisational culture and its relationship with patient safety was quite minimal, presenting difficulties with comparing and contrasting it against the broader literature landscape. As organisational culture is a comprehensive and overarching concept that arguably influences all perceptions of patient safety raised within this study, it is possible that participants did not raise specific issues, or that the interview prompts did not stimulate discussions surrounding these issues, resulting in missed topics (Wilson, 2001). Participants routinely related aspects of the other four dominant themes within the context of organisational culture, and so determining whether some concepts were a part of the organisational culture or were distinctive concepts was challenging during the stages of analysis. It is also possible that the perceived influence of organisational culture on patient safety was even broader than evidenced within this dominant theme, as historical remnants could also pertain to the past prevalent blame culture, as well as the direct patient care interpretation of patient safety. As mentioned earlier, it is also probable that some participants were unclear concerning the meaning of organisational culture and its scope. Many similar concepts were discussed during interviews, including reporting culture, safety culture, just culture, blame culture, for example, all of which have overlapping features. However, while it appeared that only a small minority of operational-level participants were confused, a standardised definition of organisational culture was provided, which appeared to help participants understand the concept without directly influencing their responses.

While participants felt that organisational culture was slow to change, it appears that as with the perceptions of reporting incidents, the organisational culture has also shifted quite quickly in recent years. It was suspected that the development had been quite fast-paced and recent, due in part to participants from the executive level expressing that they were all actively trying to minimise the perceived hierarchy. Alternatively, it also could be a result of the changes to the performance measures in 2017 and the introduction of degree requirements for paramedics in 2018, seen by some as producing clinicians who are less risk-averse (Health & Care Professions Council, 2018; NHS England, 2019). However, as

the organisational culture appears to have remained stagnant for decades prior, this sudden change was possibly overlooked. Therefore, it is possible that participants instead perceived the change as taking place over an extended period as historical remnants of the organisational and cultural legacy were still perceived as present. Unlike reporting culture, which was also stagnant for many years before its perceived transition, it is expected that participants believe that improving organisational culture requires a significant amount of time as it concerns the behaviours, norms and views of all staff in the NHS Ambulance Services (Wilson, 2001).

As demonstrated within the Introduction Chapter (Chapter 1), disasters within high-reliability organisations (HROs), like Chernobyl and the Challenger Shuttle, both occurred due to a poor organisational culture, which permitted procedural violations and system defects (Pidgeon, 1998). Healthcare organisations are also not immune from the catastrophic effects of a negative organisational culture, as evidenced by the Mid Staffordshire NHS Foundation Trust, where an estimated 400 to 1,200 patients died due to the tolerance of low-quality care (Ball et al., 2013; Francis, 2013). As demonstrated earlier, the existing literature indicated that a robust and positive organisational culture was found to have a substantial impact on patient safety within healthcare organisations. However, not much is known about this topic within the ambulance and emergency services, and Fisher et al. (2015) suggested that its historical background requires a different approach than other settings. This identified gap serves to strengthen the clinical relevance of these findings, as this study is arguably one of the first that captured the staff perceptions of organisational culture and its impact on patient safety in the NHS Ambulance Services. These findings are also significant as participants provided solutions to improve organisational culture specific to this unique care setting. These findings demonstrate that the organisational culture is perceived to be slowly beginning to improve on its former state and is now in a slow transition away from some of its harmful historical characteristics, thereby becoming safer for patients as a result. It is clear that historical remnants of the organisational and cultural legacy remain present in the NHS Ambulance Services. However, the findings provide a blueprint for those areas of concern that participants perceived as negatively impacting the organisational culture and can, in turn, be utilised to inform the development of strategies to address those issues (Nicklin and McVeety, 2002).



As Fisher et al. (2015) identified that there was a significant lack of research concerning organisational culture in the ambulance and emergency services, they suggested that future studies should explore how organisational culture could be improved to have a positive impact on patient safety. This study directly addressed this suggestion, as participants provided solutions to improve the culture by becoming a learning organisation. While increasing the training and educational opportunities for all staff in the NHS Ambulance Services may not be feasible given the current level of demand and lack of resources, empowering staff to become leaders at every level and continuing to flatten the hierarchy to open the infrastructure are both realistically achievable. If these suggestions of participants are adopted and strategies are developed for implementation, it is expected that organisational culture will improve, as both have been shown in the literature to have a positive impact on patient safety in other care settings.

## **5.7 CHAPTER SUMMARY**

As mentioned at the beginning of this chapter, the aim was to provide a synthesised discussion of the findings contextualised and situated within the literature found in the Introduction Chapter (Chapter 1) and Literature Review Chapter (Chapter 2), as well as the broader available evidence. Similarities and differences were highlighted between the findings and literature, and original contributions to knowledge produced by this study were emphasised throughout the chapter, of which a final summary will be provided below. However, it is essential to reiterate that there is a significant lack of literature on the perceptions of patient safety in the ambulance and emergency services. Therefore, many of the findings were compared and contrasted with research from other care settings, where the findings may have only indirect relevance. This gap demonstrates the significance of the findings, which present some of the first evidence in this area, thereby providing an essential foundation for future work.

This exploratory study aimed to explore and characterise the staff perceptions, knowledge and understanding of patient safety across a range of organisational levels in the NHS Ambulance Services. As demonstrated within the Methodology and Methods Chapter (Chapter 3), the generic qualitative approach and the method of semi-structured interviews adopted for this research facilitated the in-depth exploration of varied and complex perceptions of patient safety in regards to areas identified in the Introduction Chapter

(Chapter 1) and Literature Review Chapter (Chapter 2). As a result of the data collection and analysis, the following areas emerged as representing the perceptions of patient safety, including its meaning, significant risks, incident-reporting, communication and organisational culture (Atieno, 2009; Merriam, 2002). Through the Framework Method of data analysis, themes relating to these prominent issues were identified and then associated with the broader body of literature, as presented in this chapter (Fram, 2013; Gale et al., 2013; Green and Thorogood, 2009; Ritchie and Spencer, 2003). It was anticipated that capturing the staff perceptions of patient safety in the NHS Ambulance Services would result in findings that could help develop strategies and policies to address any issues raised by participants, as the effectiveness of this approach has been established within other care settings (Nicklin and McVeety, 2002; Mayo and Duncan, 2004).

The three research objectives of this study have all been met and additional new knowledge has also been revealed concerning the perceived significant impact on patient safety by communication and organisational culture within the NHS Ambulance Services.

### **5.7.1 Original Contributions to Knowledge**

While the original contributions to knowledge made by this study have been specified within this chapter, they will be summarised within this section to reiterate and emphasise the significance of the findings in respect to the minimal available literature. The structure of this section will first address the study's overall contribution to the minimal available evidence in this area, including the overarching 'take-home' message, and will then lead into the individual contributions highlighted within the five dominant themes.

As discussed previously, according to a scoping review of the patient safety literature by Fisher et al. (2015), the existing research was lacking, of low quality and was typically conducted within a single ambulance station, thereby limiting its application to other settings. Given the absence of literature, this in-depth qualitative study was the first of its kind to explore staff perceptions of patient safety from three organisational levels and across three Ambulance Services NHS Trusts in England. The findings demonstrated that their overall perceptions of patient safety were related to its interpretation, significant patient safety risks, reporting culture, communication and organisational culture. Linking back to

high-reliability organisations (HROs), as first touched upon in the Introduction Chapter (Chapter 1), it appears that the NHS Ambulance Services have applied some of the principles suggested by this industry, as well as from other healthcare settings, and have recently seen the perceptions of patient safety improve significantly as a result. Participants emphasised a broad range of improvements to reporting incidents, communication and organisational culture, all of which were viewed as having a significantly positive impact on patient safety. Therefore, the overall 'take-home' message from this study is that the staff perceptions of patient safety have shifted substantially in recent years and have become much more positive than their historical characterisation in the literature would suggest. This shift will be made evident within the contributions of each theme as follows:

#### **5.7.1.1 Varied Interpretation of Patient Safety**

The findings from this research provide the first in-depth understanding of the interpretation of patient safety by staff across all organisational levels and demonstrate that it is context and role-dependent, as operational staff defined it as relating directly to patient care, while management and executive-level staff interpreted it holistically and with a systems thinking approach. This finding is the first of its kind to demonstrate a variance in the interpretation of patient safety by staff across organisational levels within the NHS Ambulance Services.

#### **5.7.1.2 Significant Patient Safety Risks**

This study indicated that the most significant risks to patient safety in the NHS Ambulance Services were perceived to concern service demand pressures, triaging, the lack of staff training and the deskilling of clinical staff. As the available research in this area was often conflicted and identified or prioritised different risks to safety depending on the methodology, sample and country of origin, this study provides a deepened understanding of the staff perceptions of significant threats to patient safety across three organisational levels of staff in the NHS Ambulance Services.

#### **5.7.1.3 Reporting Culture Shift**

As Kirk et al. (2018) identified a lack of evidence indicating a transition from a culture of blame to an open reporting culture in the literature, this study, therefore, is one of the first to document a perceived shift away from a prominent blame culture to one where staff now feel free to report incidents without fear in the NHS Ambulance Services. According to

participants, due to NHS Trust-wide initiatives and the implementation of the electronic reporting system, Datix®, the perceptions of reporting culture has improved significantly within the last couple of years, and the number of reported incidents has grown substantially as a result.

#### **5.7.1.4 Communication**

This qualitative study provides some of the first in-depth understanding of the perceptions of communication between staff in the NHS Ambulance Services and how it is connected to patient safety, including perceived barriers to communication, as well as proposed solutions. The findings indicated that participants from all organisational levels were aware of the relationship between staff communication and patient safety, and perceived that robust communication between staff improved patient safety, while poor communication had a negative impact on patient safety. In addition, participants noted that workforce and infrastructural resources in the NHS Ambulance Services led to four prominent communication issues, including operational pressures, the dispersed and mobile workforce, the ineffective use of multiple channels of communication and outdated and ill-equipped IT infrastructure.

#### **5.7.1.5 Organisational Culture**

As there is minimal available literature which has explored the perceptions of organisational culture in the NHS Ambulance Services and its relationship with patient safety, this study provides some of the first evidence in this area. Participants from all organisational levels felt that organisational culture had a significant impact on patient safety, and referenced the existence of harmful historical remnants leftover from an organisational and cultural legacy. These historical remnants included a focus on response time targets, a risk-averse nature in front-line staff and a hierarchical staffing structure. Participants also emphasised that the organisational culture in the NHS Ambulance Services has recently experienced a positive shift and can be improved further by becoming a learning organisation, which includes providing staff with continual education and training, flattening the hierarchy and empowering staff to become leaders at every organisational level.

As this qualitative study was arguably the first to explore staff perceptions of patient safety from a range of organisational levels in the NHS Ambulance Services, there exists a

substantial need for additional research exploring this area. The following chapter will identify the strengths and limitations of the study with suggested recommendations for research, policy, practice and education.

## **Chapter 6 - STRENGTHS, LIMITATIONS and RECOMMENDATIONS**

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### **6.1 INTRODUCTION**

This chapter provides a summarised account of the strengths, limitations and recommendations for future research, policy, practice and education. The aim of this chapter is to provide the reader with further clarification of the decisions made during the study. It will also serve to highlight the significance and implications of the findings, as well as the recommendations going forward. The final chapter recounts my reflections, thereby summarising the study by providing some closing thoughts on the overall experience, in particular, my influence on the research. Within this chapter, the strengths and limitations of this study will be considered in the context of Yardley's (2000) four essential characteristics of good qualitative research: sensitivity to context, commitment and rigour, transparency and coherence, as well as impact and importance.

In addition, the Consolidated Criteria for Reporting Qualitative Research (COREQ) Checklist was utilised to ensure that the study included and reported the essential items suggested by Tong, Sainsbury and Craig, (2007); such as aspects relating to the researcher(s), methods, study context, findings, analysis and final interpretations. A completed version of the COREQ Checklist can be found in Appendix L. However, as the guide questions and descriptions found in COREQ sometimes corresponded to many different pages within the thesis, it was deemed suitable to mark whether or not this information was addressed within the thesis, rather than citing the specific page number each guide question corresponds to. When a guide question or description within the COREQ Checklist was determined not to apply to the thesis, the checkbox was marked 'N/A'.

### **6.2 STRENGTHS AND LIMITATIONS**

Sensitivity to context is fundamental to high-quality qualitative research, and those adopting a qualitative methodological approach need to be conscious of the social context of their relationship with the participants involved (Yardley, 2000). Sensitivity to the participant was considered fundamental throughout the process of data collection, and it was vital that participants felt empowered and that they had an active role in the research, rather than

being perceived solely as research subjects (Yardley, 2000). Therefore, it was essential to minimise any perceptions of a power imbalance with the participants, where they might have perceived me as holding all academic knowledge and expertise in this area (Kendall and Halliday, 2014; Sivell et al., 2019). Additional consideration was given to the organisational level of each participant, as it was assumed that a potential for a power imbalance would be higher with participants from the operational-level, than those from the executive-level. This potential limitation was addressed before the start of every interview, as a rapport was developed with each participant, where I discussed my background and how I became involved with this research project to minimise any potential perceptions of power imbalance, thereby representing a strength of this study (Sivell et al., 2019; Yardley, 2000).

As will be covered in the following chapter, Reflections of the Researcher (Chapter 7), it was feared that my neophyte nature concerning this research topic and the NHS Ambulance Services in general, would represent a significant limitation as it would be difficult to establish a rapport with the participants and that their perception of me of an outsider may influence their responses. However, this outside perspective was ultimately considered a strength as participants would regularly ask if they needed to elaborate or expand when discussing specific topics, as they presumed that I might not be aware or familiar with the content. Although my unfamiliarity with the NHS Ambulance Services and its staff was considered a limitation prior to data collection, it was anticipated that it would also represent a strength as participants would not view me in any official capacity in an environment with an evident hierarchical structure and would be more relaxed during the interview. During the interviews, a majority of participants, particularly from the operational-level, were quite candid in their responses concerning their perceptions and past experiences in the NHS Ambulance Services, possibly confirming that my outside perspective represented a strength in the data collection. Beyond the semi-structured interviews, I believe that my outsider status also represented a strength during the analysis of the data, as it was apparent that some staff in the NHS Ambulance Services harboured prejudiced views against those from other organisational levels. Having never worked within the NHS Ambulance Services, I was not exposed to these preconceptions and was able to conduct the data analysis without these views impacting the interpretation of the dataset.

In addition to being aware of the social context between the researcher and participants, it is fundamentally important to have an awareness of how their socio-cultural setting

influences the perceptions and understanding of a phenomenon (Yardley, 2000). All 44 participants in this study were recruited from three Ambulance Service NHS Trusts in England and represented three distinct organisational levels and a geographically broad range of different areas covered by their respective organisations. For example, a participant from the operational-level might have worked in a small and isolated rural station, while an executive-level participant would be based centrally in a metropolitan NHS Trust headquarters, a hundred kilometres away. Therefore, neglecting the impact of context on the responses of participants would be a significant limitation and it was considered essential to maintain an awareness of how each of these different work environments may have influenced the responses of each participant during the analysis. Some demographic details were also collected from participants, as seen in Table 20, where it was also evident that participants were very different in terms of gender, education, age and experience. This demographic information and its influence on the responses of participants was also considered during the analysis, thereby representing a strength as it demonstrated an awareness of the socio-cultural context.

Managing the influence of subjective interpretation is a key challenge for qualitative research, as reality is understood in multiple ways, thereby representing a significant potential limitation for this study (Bradshaw, Atkinson and Doody, 2017; Cooper and Endacott, 2007). However, this issue was considered and addressed within the adopted methodological approach by including verbatim quotes from participants to illustrate their perceptions, as well as to support the interpretation of the data (Bradshaw, Atkinson and Doody, 2017). The illustrative quotes from participants captured their overall perceptions towards each particular phenomena and enabled the reader to identify the relationship between the data and how it was interpreted, thereby representing a strength of this study (Anderson, 2010). Beyond substantiating the findings with verbatim quotes, it was suggested that participant validation was incorporated into the study design to strengthen the findings. Participant validation, or member checking, where participants are asked to review the interpretation of their data to check for accuracy, could be utilised to strengthen the findings, as this approach helps verify the validity and reliability of the findings (Doyle, 2007). However, this approach also has many limitations, including that the perceptions of participants can change with time, the ethical and practical issues associated with returning data to participants and deciding who has final say over the final interpretation of the findings (Birt et al., 2016). Therefore, while participant validation was considered initially during the



design of this study, it was ultimately determined unsuitable as it presented too many challenges with little perceived benefit.

Beyond sensitivity to context, good qualitative research requires a robust level of commitment and rigour (Yardley, 2000). A researcher's commitment to an area of research can be demonstrated through lived experience of a phenomenon, such as in a capacity as a patient or carer; however, as noted within the preface and reflexivity sections of this thesis, prior to undertaking the PhD study, I had no experience with or extensive knowledge of the NHS Ambulance Services (Yardley, 2000). As discussed on the previous page, instead of representing a limitation, my neophyte nature was viewed as a strength as it allowed for a less biased perspective when collecting and analysing the data as no preconceptions were present from studying or working in the NHS Ambulance Services previously. In addition, the lack of prior experience did not detract from the prolonged engagement with the research, as total immersion in this topic was necessary and is evident throughout the three-years of this study, and this thesis represents the product of that thorough commitment.

A high-quality sampling framework was developed to maintain a rigorous approach to the selected qualitative method by addressing the four barriers in studies utilising interviews, including establishing the sample universe, choosing the sample size, selecting a sampling strategy and the approach to recruitment (Robinson, 2014). By following these guidelines, the resulting sample was logical, feasible, and was in line with the aim of the research, representing a strength of this study. In particular, a substantial amount of time and effort went into developing the sampling frame and size, as three distinct organisational levels and NHS Trusts were included to ensure that the participants represented a wide range of knowledge, skill sets, experiences, and clinical and academic backgrounds, therefore, supplying the information necessary for an analysis which was both complete and comprehensive (Yardley, 2000).

Prior to developing the sampling frame adopted for this research, it was evident that many staff roles and levels within the NHS Ambulance Service have an impact on patient safety in their respective organisations. A majority of the previous literature has focussed on one role or organisational level, such as paramedics or medical directors, in isolation, and it was considered vital to incorporate participants representing a range of organisational levels. Thus, an approach based upon data source triangulation was adopted to capture the

perspectives of staff at all organisational levels within the NHS Ambulance Services, thereby representing one of the most significant strengths of the study (Carter et al., 2014; Flick, 1992). As first highlighted within the methods section of this thesis, participants were recruited from three distinct Ambulance Service NHS Trusts in England, as well as three organisational levels, including executive, management and operational staff. This data source triangulation represented a particular strength as it was a novel approach to this area of research and facilitated the identification and analysis of commonalities and differences between these organisational levels and Ambulance Service NHS Trusts, thereby bolstering the rigour, as the focus could be drawn to the subtle nuances or limitations of a single perspective on a topic through this broad approach to analysis (Carter et al., 2014; Flick, 1992; Yardley, 2000).

While representing one of the most significant strengths of the study, the categorisation of participants into three different organisational levels using a standardised approach also constituted a slight limitation. It was ultimately felt that this approach lacked some consistency as the roles varied widely across the three Ambulance Service NHS Trusts. As mentioned in the Introduction Chapter (Chapter 1), the variability in roles was most prevalent within the management level, where participants represented a broad range of different positions and departments, which may have impacted comparisons across the three distinct NHS Trusts. Therefore, it must be considered whether the sample adequately represented this variation. However, as a majority of the variability in responses was according to the organisational levels while remaining similar across the three Ambulance Service NHS Trusts, it could be argued that an adequately consistent approach was taken to categorising participants in each of the three NHS Trusts.

Although perceptions were canvassed from participants representing a broad range of staff across three organisational levels from three Ambulance Service NHS Trusts, the sample in this qualitative study does not claim to be, nor is it wholly representative of over 35,000 staff in the NHS Ambulance Services. As a result of the qualitative methodology, the findings from this exploratory study cannot be generalised to the broader context. For example, within all three NHS Trusts, the operational-level participants were predominantly younger and degree educated, while only a small number represented an older and less educated demographic. According to data from the HCPC, in 2016, paramedics aged 20 to 34 represented approximately 20 percent of the paramedic workforce, while those aged 40 to

59 constitute roughly 60 percent (Health & Care Professions Council, 2016). Therefore, it is possible that as participants were generally younger at the operational-level, that the sample was not as representative of the predominantly older paramedic cohort and their perceptions of the reporting culture in the NHS Ambulance Services. Beyond a majority of operational participants representing a younger and more educated demographic, there are additional limitations associated with the sample, which are outlined below.

As the sample in this study was self-selecting, it could be argued that those who were interested in participating in this research may be more engaged with their NHS Trust and initiatives concerning reporting culture. In contrast, staff who do not keep themselves updated with initiatives or engage with communication from their NHS Trusts would presumably be less likely to participate in this study, and their perspectives on reporting incidents would then not be captured. Therefore, this self-selecting sample arguably constitutes a limitation, as the study may have only captured the perceptions of staff who are more likely to view the state of patient safety more positively within their NHS Trusts. It could also be argued those interested in participating in this research had an 'axe to grind', and viewed an interview as an opportunity to express their displeasure with the state of reporting in the NHS Ambulance Services or with blame or bullying from particular colleagues. However, as participants appeared relatively optimistic concerning the state of reporting culture within their organisations, it is suspected that cases of this were rare. While these could be viewed as potential limitations of the study, it is unknown how they could be addressed and represent prevalent issues with recruiting health professionals, who appear to have increasingly limited availability to take part in research.

Beyond limitations posed by recruitment and the sample, while the five dominant themes, including *Varied Interpretation of Patient Safety*, *Significant Patient Safety Risks*, *Reporting Culture Shift*, *Communication* and *Organisational Culture*, were said to constitute the perceptions of patient safety of staff in the NHS Ambulance Services, they may be a product of the prompts used in the interview schedule (Appendix F) and unrepresentative of all or some of their patient safety perceptions. While the qualitative methodology facilitated the probing of perceptions which would have been impossible with a quantitative survey tool, this uncertainty still represents a limitation of the study (Barriball and While, 1994; Percy, Kostere and Kostere, 2015). However, although it is possible that the perceptions of patient safety, as identified in this study, are not wholly comprehensive, the content in the interview

schedule was informed partly by the scoping review by Fisher et al. (2015), as well as the broader literature, thereby ensuring the inclusion of prominent issues identified by relevant research. In addition, participants were also provided with an opportunity to voice additional concerns, perceptions, questions about patient safety at the end of each interview, where they would have been able to raise a topic they felt was not covered or addressed, minimising the likelihood that important issues went undiscussed. Therefore, the impact of this potential limitation was actively lessened to ensure that the perceptions of patient safety by staff in the NHS Ambulance Services were as exhaustive and complete as possible.

While the structured timeline presented some difficulties, this study was strengthened by the three-year duration of the PhD contract at Edge Hill University, which provided ample opportunity and time to be immersed within the data to ensure a complete and comprehensive interpretation of the sizeable qualitative dataset. As highlighted within the methods section, the analysis of the data was ongoing during the data collection, and use of the constant comparative technique facilitated the continuous comparison across and within cases to refine emerging themes within the matrix as each subsequent interview was conducted and transcribed (Fram, 2013; Gale et al., 2013; Green and Thorogood, 2009; Ritchie and Spencer, 2003). In addition to the rigorous and in-depth approach facilitated by the length of the PhD, the rigour of this research was also reinforced through the process of peer-auditing, where the supervisory team extensively reviewed each stage of the data analysis process to ensure consensus on the subjective interpretation of the data, thereby establishing inter-rater reliability and strengthening this study (Armstrong et al., 1997; Barbour, 2001).

Beyond commitment and rigour, good qualitative research is also dependent on a high degree of transparency and coherence (Yardley, 2000). A significant strength of this PhD is the absolute transparency of the processes of data collection and analysis, as well as the extensive justification of every decision made, thereby informing the reader of the logical steps taken which shaped the final thesis. To bolster the transparency and coherence of the study, there has been an extensive documentation of processes involved in the recruitment of participants, the methods of data collection and analysis, and the justification behind any decisions, thus enabling the reader to replicate the research, although with non-identical findings (Noble and Smith, 2015; Shenton, 2004; Yardley, 2000). This transparent approach throughout the thesis represents a significant strength of the study, as it provides

readers with access to the data and evidence underlying the overall research conclusions and has three different dimensions, including production, data and analysis (Moravcsik, 2014).

Beyond transparency, the coherence of research, or the appropriateness of the research question, philosophical underpinnings and the methods of data collection and analysis, is also fundamental to any good qualitative research (Yardley, 2000). As discussed in the Methodology and Methods Chapter (Chapter 3), in generic qualitative research, this approach does not subscribe to or follow a single methodological perspective or framework. As a result, critics argue that without established methodological guidelines, inconsistencies in the research design may arise between components in the research framework, thus impacting the coherence of generic qualitative inquiry and producing contradictions in the results (Caelli, Ray and Mill, 2003; Cooper and Endacott, 2007; Crotty, 1998; Kahlke, 2014). Despite these potential methodological limitations, an argument can be made that instead of selecting and connecting incompatible methodologies leading to 'method slurring', that generic qualitative inquiry facilitates the development of a customised framework bespoke to the research question and comprised of suitable epistemological and theoretical viewpoints, methodological approach and methods of data collection and analysis (Baker, Wuest and Stern, 1992; Kahlke, 2014). This custom framework allowed for the research question to guide the selected approach, instead of the selected methodological approach informing the research question, thereby increasing the overall coherence of the study. Therefore, a strength of this research was the generic qualitative approach due to the appropriateness of its theoretical perspective and methods of data collection and analysis, as it was felt that another qualitative methodological approach would not have captured such rich and comprehensive findings.

Lastly, good qualitative research is dependent on its impact and importance achieved through effective dissemination of the findings (Yardley, 2000). A significant strength of this study is the comprehensive approach to dissemination, which aims to utilise a variety of methods, including publishing the findings within international academic journals, utilising media outlets such as podcasts, radio interviews and news websites, as well as sending the findings to participants and high-level staff in the NHS Ambulance Services. The findings of this research project have already begun to be disseminated through a diverse number of mediums, each having varying levels of impact and representing different audiences,

including academics and the wider public. As Yardley (2000) suggests that the impact and importance of research can only be assessed by those to whom the findings have relevance, the conclusions of this research have been summarised and emailed to all 44 participants in the study, who each requested more information concerning the outcome. While it is too early to evaluate the level of impact and importance that this will have on the services as it is only 44 individuals, it was seen as essential to highlight their contribution to research and to ensure they are aware of the findings, as it was not expected that staff in the NHS Ambulance Services would review recent publications concerning this topic. However, as these staff represent three distinct Ambulance Service NHS Trusts and executive, management and operational organisational levels, a strength of the study is in its design, as one NHS Trust may not be interested, while the other two may actively prioritise these findings, for example.

In addition to disseminating findings to participants, as mentioned in the previous chapter, a substantial strength of the study's impact and importance is that relationships have been developed and maintained with high-level staff who can enact change, such as those from the Clinical Directorate. Following the submission of the thesis, these members of staff will also receive a summary of the study and conversations will be had concerning the potential to operationalise any findings by informing policies or guidance, for example. By disseminating the research through the various channels described above, reaching both academic and public audiences alike, the hope is that this increase in knowledge concerning the staff perceptions of patient safety in the NHS Ambulance Services will provide a deepened understanding and awareness around this vital topic for ambulance service staff, researchers, as well as the public.

However, while relationships with staff in the NHS Ambulance Services represented a vital strength of this study, a limitation of the research was the limited patient and public involvement component. As a study in the NHS Ambulance Services, incorporating the perspectives of patients and the public is challenging, as people generally do not regularly require an emergency response, and the nature of the situation limits the ability of those who do to critique the care that they receive. In the early stages of developing this project, I was put into contact with a member of the Patient and Public Involvement team from the Pre-hospital Outcomes for Evidence-Based Evaluation (PHOEBE) project at the University of Sheffield. Following some correspondence over email, they provided helpful guidance

and informed me of the work that they do and what is important to service users of the NHS Ambulance Services. A member of the PPI team from the PHOEBE project also directed me to several studies concerning the perceptions of service users, including Fisher et al. (2015), which broadened my awareness and understanding of their perspectives and concerns as patients and members of the public. Despite some emphasis on PPI, it should be incorporated from the development of research, through to its dissemination. Therefore, the findings of this PhD will also be shared with contacts in the PHOEBE PPI Reference Group, where their advice and guidance will be sought for determining the most suitable methods of dissemination to patients and the public thereby addressing this limitation and representing a strength of this research.

In conclusion, as an area with minimal previous focus, the knowledge developed from this research project is foundational, and a significant strength of this qualitative study is that it provides a unique perspective and an in-depth understanding of the perceptions of patient safety in the NHS Ambulance Services (Yardley, 2000). However, due to the small number of participants, it requires additional research to both substantiate the findings and explore other areas of interest, and the suggestions for future research, policy, practice and education are discussed below.

## **6.3 RECOMMENDATIONS**

Recommendations have been examined, summarised and proposed in four distinct areas, all of which are based upon the conclusions of this study and are outlined under the following headings: *recommendations for research*, *recommendations for policy*, *recommendations for practice* and *recommendations for education*.

### **6.3.1 Recommendations for Research**

To the author's knowledge, this study was among the first of its kind to provide an in-depth understanding of the staff perceptions of patient safety from three organisational levels in the NHS Ambulance Services. The literature concerning the perceptions of patient safety in the ambulance and emergency services is quite minimal, thereby presenting a wide gap for interested researchers. However, the findings from this study have identified and underlined

several specific areas which are recommended for future research and will be discussed below.

Almost all participants stated that the past reporting culture in the NHS Ambulance Services was inadequate and that incident reporting has increased substantially within their respective organisations due to recent concerted efforts. Participants suggested that the NHS Ambulance Services had experienced a significant shift to a more positive reporting culture as a result of encouragement and support by the organisation where learning was emphasised instead of blame and punishment, as well as newly developed infrastructure to facilitate the reporting of incidents online. As the literature around reporting culture and data from the NHS Staff Surveys do not support these findings and demonstrate the existence of an evident blame culture, it is suggested that further research is conducted in this area to explore whether or not this perception extends beyond those of the participants included in this project (Byrne and Bury, 2018; Chesters, Grieve and Hodgetts, 2016; Ingram, Rees and Sujon, 2019; Kirk et al., 2018; NHS Survey Coordination Centre, 2018). It is also recommended that research explores the perceptions of staff concerning the reporting system, Datix®, to identify how it could be improved to make reporting more accessible to decrease the number of unreported incidents.

A couple of participants in the study were concerned with the high level of staff attrition in the NHS Ambulance Services and how it impacts patient safety. As mentioned in the Introduction Chapter (Chapter 1), this concern is supported by figures from the National Audit Office (2017), which demonstrated that from 2011 - 2012 to 2015 - 2016, the rate of employee turnover has risen from 4.7 percent to 9.6 percent. As demand continues to rise, operational pressures will be facing an increasingly inadequate level of staff, which will arguably have both severe and negative implications for patient safety. Some staff are leaving the NHS Ambulance Services for obvious reasons, such as having the qualifications to work in more arguably appealing settings, including GP surgeries and walk-in clinics, where they can work more traditional hours; however, the literature in this area is still quite scarce. Therefore, additional research is suggested to determine who is leaving, why they are leaving as well as what can be done to convince them to stay to slow the rate of employee turnover (National Audit Office, 2017; UNISON, 2015).



Participants perceived that communication issues stemmed from infrastructural and workforce resources and that improving communication within the NHS Ambulance Services would have a substantially positive impact on patient safety. Several participants discussed how they were unaware of the effectiveness of individual channels of communication in reaching the various subsets of staff. They suggested that staff have individual preferences for receiving communication and that sending out information via one medium, such as in emails, for example, may reach one subset of front-line staff, while another group neglects it entirely. Therefore, it is recommended that future research is conducted to explore the efficacy of each channel, as well as investigate the preferences for channels of communication by staff. As many participants noted the need to enhance IT infrastructure for communicating in the NHS Ambulance Services, research reviewing the effectiveness of different technologies and their impact on the communication should also be conducted. Once there is a deeper understanding of the communication preferences of staff, Ambulance Service NHS Trusts may then be able to disseminate information utilising a personalised approach to ensure an increased number of staff members are reached, thereby improving patient safety as more staff would be aware of new policies, issues and other relevant information.

As a qualitative study representing 44 participants from three organisational levels and Ambulance Service NHS Trusts, the findings were not meant to be generalisable or representative of all staff in the NHS Ambulance Services. However, as there was a degree of consistency in the responses by participants across the three NHS Trusts, this may indicate that the findings are generic and are possibly transferable to other NHS Trusts. While the findings were consistent, larger-scale quantitative research is still required to determine whether they have application beyond the 44 participants interviewed for this study. Therefore, it is recommended that the findings from this thesis are used to inform the design and development of a survey for a quantitative research study, or, as similar to the work done in Patterson et al. (2010), a validated tool such as the Safety Attitudes Questionnaire (SAQ) could be amended to investigate this area further, such as done with the Emergency Medical Services - Safety Attitudes Questionnaire (EMS-SAQ).

### **6.3.2 Recommendations for Policy**

Policy in the NHS Ambulance Services is typically developed and administered by the NHS Trust Directorate and can concern many different areas, such as financial, strategic, medical, quality, innovation, improvement and corporate affairs, for example. According to the responses of participants, specific recommendations for policy can be made concerning social media, the reporting of incidents and the definition of patient safety; each of which is addressed below. It is important to reiterate that as this is a small-scale study, the findings should not inform policy but can highlight and guide areas that may require further consideration.

As the use of social media becomes more prevalent in society, the NHS Ambulance Services have adapted to this changing technological landscape by using many official NHS Trust accounts on social media platforms to disseminate information and communicate with staff and the wider public. It was clear from the responses of participants that there are growing concerns around its use by staff in the NHS Ambulance Services, as some commented that they were unsure of the trust policies regarding social media platforms, such as Facebook, Snapchat and Twitter, and avoided participating with official NHS Trust accounts altogether. Older participants, in particular, described how they were not keen to link or use their personal social media accounts with work for fear of violating policies or getting into trouble for posting something which their NHS Trust might deem inappropriate, for instance. While a majority of Ambulance Service NHS Trusts in England have social media policies accessible on their websites, participants appeared not to be aware of their existence or had not read them thoroughly. Therefore, it is recommended that the NHS Ambulance Services explore the use of social media policies which address the reservations and fears of staff around its usage. Instead of hosting these policies exclusively on their NHS Trust website, they could also be made easily accessible for staff with links on each social media platform.

According to some participants, there was a lack of transparency from their respective NHS Trusts around reporting patient safety incidents, including what constitutes a reportable incident, how they can report incidents, as well as the investigative process following an incident. Policies concerning this information are readily available on each of the websites of the ten Ambulance Service NHS Trusts, however, similar to the social media policies, it

was evident that there was limited awareness of their existence by some staff. These policies were also quite lengthy and contained a substantial amount of information which staff may not have the time to read in depth. Given the importance of the policies and the information they contain, it is recommended that NHS Trusts consider the effectiveness of their current approach and review whether staff are aware of this information and know where it can be accessed. The NHS Ambulance Services could review the effectiveness of providing physical or digital copies of all information on ambulances so that staff can reference this information if they are unsure whether an incident occurred or the required steps to report it. Also, as policy documents can incorporate a substantial amount of information which may make it convoluted or complicated for staff to follow, the NHS Ambulance Services could explore digitising the reporting policies into a more accessible and interactive format online. For example, if staff were uncertain if an event represented a reportable incident, they could type in keywords describing that event, and the website or app would populate information regarding the incident status, the protocol for its reporting and an example of the investigative process and likely outcome.

As mentioned in the Introduction Chapter (Chapter 1) and Discussion Chapter (Chapter 5) of this thesis, the NHS Ambulance Services have not adopted a single and standardised definition of patient safety. Participants within this study interpreted patient safety differently across organisational levels, and according to Fisher et al. (2015), this inconsistency raises issues with the interpretation and application of information concerning patient safety, and they advocate for a shared adoption and categorisation of the patient safety-related terms and concepts. Therefore, it is recommended that a national organisation, such as the College of Paramedics or the Association of Ambulance Chief Executives (AACE), could consider reviewing the definition of patient safety and its related terms and concepts specifically for the ambulance service environment. If one of these national organisations developed a standardised definition of patient safety, it is theorised that all ten English Ambulance Service NHS Trusts could then adopt this version into their local policy. Research into patient safety in the NHS Ambulance Services could then also adopt and use this definition, thus potentially ensuring a more consistent interpretation across NHS Trust policy documents and the broader literature landscape than what is seen currently.

### **6.3.3 Recommendations for Practice**

While the scope of this small qualitative study did not include any medical care or treatment, such as intubation, several recommendations for future practice, primarily concerning operational and organisational aspects of the NHS Ambulance Services, have been highlighted for further exploration from the findings and will be discussed within this section.

Firstly, although the online reporting system, Datix®, was introduced recently and was perceived by participants as increasing the number of reported patient safety incidents in the NHS Ambulance Services, work is still required to establish the robustness of this system. It is recommended that the processes involved in the reporting, evaluating, and feedback of incidents could be reviewed to assess their transparency and accessibility for staff. Many participants advocated for greater clarity of the outcomes of patient safety incidents as they felt that the operational staff would feel less reticent about reporting incidents if they knew the process was blame-free and that they would not lose their job or license. Therefore, it is recommended that the NHS Ambulance Services might consider using specific completed cases as examples, either stored within an accessible database which staff can access, or advertised via routine information bulletins (RIBs) or on NHS Trust managed social media platforms.

In addition to increasing the robustness of the reporting system, it became apparent that participants felt that there was a lack of feedback provided to front-line staff; an issue they viewed as having vital importance. Therefore, it is recommended that the feasibility and scope of a feedback loop mechanism could be explored to review whether front-line staff are made aware of any relevant changes within the trust which have relevance to them, including patient outcomes, NHS Trust initiatives and changes, as well as the ultimate outcomes or results of their suggestions. Any existing feedback mechanisms in ambulance and emergency services within other countries overseas could also be evaluated, and while difficulties are presented by the nature of the mobile and dispersed working environment of NHS Ambulance Services, the feedback process in hospitals could be referenced to review relevance to the emergency service setting.

Operational-level participants in the three Ambulance Service NHS Trusts involved in the study often lamented that front-line staff regularly work over their twelve-hour shifts while

responding to their last call. They would often candidly recount stories they had heard, for instance, where colleagues reportedly ran red lights when tired at the end of shifts, or forgot a part of a treatment when caring for a patient. While participants regarded this as irritating as they would prefer to have a designated finish time, they also viewed it as a significant danger to patient safety as staff at this stage generally rush to finish as quickly as possible, or are exceedingly fatigued after working over twelve hours. Therefore, the impact of shift duration on patient safety could be reviewed in light of the findings from this study. It is understood that some NHS Trusts are currently exploring methods to address this issue. For example, an approach currently being trialled in at least one Ambulance Service NHS Trust is that paramedics return to the station after their last job clears between the eleventh and twelfth hour of their shift. Following their return to the station, front-line staff could finish their shift by reading work emails, cleaning their ambulance and preparing the equipment for the next shift, or any other work responsibilities they typically do not have time for while on the road. While it is understood that this rework to practice would be complicated and potentially financially cost prohibitive, it is expected that the benefits to patients and staff from this change could be substantial. Therefore, the tradeoff between risks of meeting these types of interventions and the potential benefits to patient safety need to be explored.

One final suggestion for practice concerns opening the workforce infrastructure, where staff gain insight into the responsibilities in other positions. As highlighted throughout this thesis, staff in the NHS Ambulance Services, in particular, paramedics, work in increasingly isolated environments where they do not see their management and executive-level colleagues, and vice versa. This organisational divide ensures a gap in perceptions of staff, where executives may not entirely understand the challenges facing paramedics, and paramedics might not be aware of what the Directorate is working on or why, for example. A PhD research project from 2009 found that participants expressed similar concerns about the closed workforce infrastructure and that it needed to be more open, indicating that this issue has not yet been resolved after a decade (Wankhade, 2009). Therefore, it is recommended that the NHS Ambulance Services explore and investigate methods which could address organisational silos to improve communication and organisational culture, ultimately improving patient safety as a result.

#### **6.3.4 Recommendations for Education**

As evidenced by the responses of participants from all organisational levels, a lack of regular education and training was perceived to represent a significant patient safety risk, and it is clear that participants felt that more opportunities needed to be offered to staff to maintain their clinical proficiency. However, while increasing the education of staff was supported by participants, demand was cited as the primary factor restricting time and opportunities for education and training, frequently leading to cancelled and postponed sessions. Therefore, it is recommended that different educational pathways utilising technological approaches are explored within the NHS Ambulance Services to potentially circumvent the barrier presented by demand. Requiring that operational-level staff do training at home, or outside of their work hours was not favourable according to many participants and is not recommended. Under the constraints of the current demand and operational pressures, it is suggested that they could be reached within their dispersed and mobile environment and the use of mobile phones and tablets could be explored as platforms for short training and educational opportunities that staff can access through apps. In theory, staff would then be able to finish these at their own pace in between jobs, and a digital database could store records detailing which staff have completed which training sessions.

While participants have heralded the new degree programme required for paramedics in England as having a substantial positive impact on patient safety and the culture of the NHS Ambulance Services, some adjustments in the curriculum may prove beneficial. For example, a few executive-level participants expressed concern that although the new three-year degree pathway was producing clinically knowledgeable and capable clinicians, the coursework was preparing paramedics purely for emergency medical situations, which they believed did not respond to the current needs of service-users. The primary worry was that paramedics are educated and trained to deal with a tiny proportion of emergency cases, a historical focus of the ambulance and emergency services, while the curriculum ignored a majority of the jobs they are now sent to, including non-emergency situations more in line with social care work. To address this, it is recommended that the College of Paramedics, who determine the curriculum for the three-year university degree, could consider examining the needs of service users to ensure that they are adequately represented within the coursework for students. In addition to responding to cardiac arrests, a condition heavily

emphasised within their coursework, students could also be prepared to deal with patient conditions which feature more frequently in urgent care situations.

As demonstrated within the Findings Chapter (Chapter 4), the service demand was perceived as a significant patient safety risk, and as the rate of demand continues to increase each year, it is expected that this issue will become more pressing. By reducing the workload, front-line staff would have more time for communication, education and training, all of which would arguably have a significantly positive impact on patient safety. However, the NHS Ambulance Services has limited control of who dials 999 or 111; therefore, the problem posed by demand may be due to a deeper societal issue, which might be outside of the remit of the services. Participants made it clear that a lot of the responsibility fell upon the patients to be able to differentiate between situations which warranted an emergency response and those which were not as severe, and could be handled by dialling 111. To help reduce demand, many participants advocated for increased education of the public to increase their understanding of the purpose of the services. The NHS Ambulance Services have already operationalised many methods to educate the public, as the social media pages of Ambulance Service NHS Trusts in England commonly share posts which instruct patients to dial 111 in non-emergency situations, and many ambulances carry similar messages on the sides of their vehicles. The available research around the efficacy of educating the public to reduce demand is minimal. However, it is recommended that the NHS Ambulance Services consider additional and alternative methods to inform the public concerning the appropriateness of dialling 999, as it represents a cost-effective method to help reduce demand for an emergency response.

Lastly, it is recommended that the clinical education provided to operational-level staff is assessed to evaluate which skills are currently evidence-based. While the NHS Ambulance Services continue to establish itself as a clinical discipline capable of a high standard of care, significant gaps remain in the evidence-base that supports practice (Simpson et al., 2012; Smith et al., 2007). Many operational-level participants expressed concern that the care that they were required to provide by their respective NHS Trust was not always based on the most recent and reliable evidence found in the literature. These participants often commented that they did not know why they treated patients in a certain way while available research was suggesting it was ineffective or dangerous, frequently adding that other health professionals such as nurses or physicians would instruct them that what they did was

inappropriate. Therefore, it is recommended that the skills which are taught within the degree-programme are thoroughly evaluated to determine whether or not they are based upon the best and most current research evidence and clinical experience to improve patient safety.

The following chapter documents my reflections as a researcher, captured both while undertaking the study and following its completion, before a final word then concludes the entire thesis.



## Chapter 7 - Reflections of the Researcher

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### 7.1 INTRODUCTION

The aim of this chapter is to present a summarised account of my reflections as a researcher that were recorded throughout the study and following its completion. As discussed in the Methodology and Methods Chapter (Chapter 3), although the emphasis on reflexivity is not as pronounced within generic qualitative inquiry as it is in other methodologies, its exploration and application were determined essential in ensuring a high degree of methodological rigour and quality in the study (Mertens, 1997; Pillow, 2003; Shaw, 2010; Thorpe and Holt, 2007). Therefore, a reflective approach was adopted and aided by the use of a journal throughout the study, where the management of the data collection and analysis, as well as any opinions, critiques and proposed solutions, were documented and continually reflected upon (Baillie, 2015; Ortlipp, 2008). The use of a reflective journal was a critical part of the qualitative data analysis, as the notes from it helped in the identification of any emerging themes within the matrix format of the Framework Method (Gale et al., 2013). In addition, maintaining a journal facilitated a transparent approach which provides the reader with insight into my decision-making, as well as justification for any choices that were made during the study (Yardley, 2000). This reflective approach of the research processes was routinely discussed during supervisory meetings to learn from mistakes and examine my subjectivity to reduce my biases and prejudices (Newton et al., 2011).

It is evident that inexperienced or neophyte researchers are typically unaware of all problems associated with researching a topic, and this perception is worsened when research is presented as an orderly and straightforward process (Boden, Kenway and Epstein, 2005). According to Ortlipp (2008), inexperienced researchers, including PhD students, can address this issue by documenting the non-linear process of their research to demonstrate that it is often full of mistakes, uncertainty and timidity, which is precisely what the notebook entries and this chapter aimed to capture and present. The subsequent sections document my reflections during the study, as well as following its completion, thereby providing an in-depth and transparent look at the processes involved in the research.

## 7.2 REFLECTIONS DOCUMENTED DURING THE STUDY

As mentioned within the preface section of this thesis, I was slightly nervous and anxious about interviewing participants within this study, as I had no prior connection to the NHS Ambulance Services and no clinical background of any kind. A colleague and friend who was a paramedic and PhD student themselves once criticised a prominent academic in the field who, similar to me, did not have any prior connection to the NHS Ambulance Services and was seen as capitalising on the lack of research in this area. Although I do not think they meant anything by this comment, unfortunately, it stuck with me from that moment, spurring much of my anxiety during the process of data collection. I was chiefly worried that I would not be respected and would be seen by staff, especially those eager to get into research, as opportunistic and encroaching on their turf, thus leading to difficulties with recruitment.

The recruitment methods, such as the recruitment flyer (Appendix D) and participant information sheet (Appendix I), did not provide extensive background information and only described the research and my status as a PhD student. However, as I have a distinctly American accent, participants typically would bring it up quite quickly and ask about my background, and so I began interviews by introducing myself and addressing how I became involved in the research. Upon reflection, my lack of clinical expertise did not present any issues with participants, and my accent helped build a rapport, as they often liked to query what brought me to the United Kingdom or discuss holidays in the United States. Establishing a healthy rapport with participants was viewed as an integral aspect of the interviews as research has shown that it can have a positive impact on the responses of participants and the substance of the overall discussion (Gill et al., 2008).

While research suggests that a power imbalance may exist between the researcher and researched, I felt that this power was redistributed and equalised once a rapport was developed, as participants realised that they knew far more about this area once they learned that I was not a clinician (Karnieli-Miller, Strier and Pessach, 2009; Råheim et al., 2016). However, while it became clear that my background did not impact my ability to recruit participants or develop a strong rapport, my lack of clinical knowledge did present some other issues. For instance, participants would reference a large number of acronyms, medical terminology and NHS Trust initiatives that I would not be aware of or understand.

Although I knew I would be able to ask a paramedic colleague to explain these following transcription or search for their meaning online, it was difficult if they required immediate contextualising to aid in the questioning during the interview. However, as participants became aware of my background, they would regularly ask if they needed to elaborate or expand on particular subjects or terms.

As first mentioned in the Methodology and Methods Chapter (Chapter 3), I kept a reflective notebook during the three years of my PhD to document my experiences, thoughts and attitudes towards aspects of the research processes. Extensive notes were taken during data collection, analysis, supervisory meetings and everything else in between, an example of which can be found in Appendix S at the end of this document. Entries were not always consistent and generally followed a memorable experience or event where I felt it was important to capture my feelings at the time to reflect on my influence on the research processes and findings (Pillow, 2003; Thorpe and Holt, 2007). I thought it was essential to include some specific entries below copied verbatim from my notebook, as they relate to significant points of the PhD and highlight some of my overall development over the previous three years. These six entries document some challenges I faced and how they were addressed as my knowledge and experience as a researcher progressed and developed, thereby highlighting my influence on the overall study. I also include my reflections now as I reread them now to provide my current thoughts on those past moments as I am now nearly finished. These entries and my current thoughts are included in the following five tables:

**Table 27: Reflections - Registration Stage**

<b>Diary Entry 13/01/2017</b>	<i>'It's a Friday and my first diary entry in months as it's been a bit hectic. I submitted my registration documents in preparation for my first viva, including the proposal, last week. I wasn't sure if I'd be able to get it all done on time, as the patient safety literature, familiarity with the NHS Ambulance Services and developing a study were all previously out of my wheelhouse, and I had to bring myself up to speed and finish it within four months. I'm not completely sure how I'll do given the circumstances, but I gave it my best shot so I'll try to stay positive. I have a little bit of an imposter syndrome, as everyone else appears to know their study so well and all of the research methodologies that they want to use. Someone explained this to me the other day, as Americans apparently don't emphasise research as much or at all within undergraduate degrees, while British universities have research entrenched throughout the curriculum. Oh well, the point of the PhD as far as I can tell is to develop yourself as an</i>
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	<i>academic researcher, so if I put in the effort and manage my time well, I will get up to speed (I hope sooner rather than later!?).'</i>
<b>Reflections</b>	Looking back, this was not a great time in my PhD experience. It was the only time I had imposter syndrome, as I shortly realised after a few more months that I was not the single PhD student struggling. I was admittedly out of my depth at the time and did not have a firm grasp on the literature, or which methodological approach was appropriate. For example, I began this project with a grounded theory (GT) approach, and following the viva, I met with one of the Professors at Edge Hill University to discuss why GT may not be the most appropriate for this study, as well as which methodologies are more aligned with the aim of the research. However, while arguably representing a stressful period, I like remembering this moment, as it sets a baseline for my ability as a researcher and captures how far I have come since then.

**Table 28: Reflections - Literature Review**

<b>Diary Entry 05/03/2017</b>	<i>'I am going through the ethical approval stages, which involve a lot of waiting, and so I am currently attempting to refine the literature review to get it signed off by my supervisors, and it is not going very well. The perceptions of patient safety is just such a nebulous topic, and dependent on my search strategy, I can find either 1,000 publications loosely related to the subject, or about zero matches absolutely aligned with my research. This is completely stressing me out, as my worst fear is that my review will be too narrow, and I will miss some flagship text that an examiner thinks should have been included. Or it could just as easily be too broad, and I include far too many pieces of irrelevant studies that are only tangentially related to my subject out of paranoia. Even after I solidify my search strategy, I have no idea how I'm going to begin to structure the review, as there isn't much out there, and they all appear to be using completely different methodologies and samples, which will obviously make it difficult to synthesise. I have a lot of time at this point to get it right, but still, I am not loving this chapter as I feel that it's very easy to make a catastrophic mistake.'</i>
<b>Reflections</b>	Upon reflection, my thoughts at this stage were entirely justified, as the narrative review was one of the hardest chapters to get right within the thesis. As data collection was to begin later that year, it was important to have this chapter relatively completed by the time I applied for ethics, so that the findings could help inform the interview schedule. It did take a few months longer than expected, as a substantial amount of time was required to establish a robust search strategy that was agreed upon by myself and my supervisory team, as well as how to structure the overall review narrative. While getting chapters approved by my Director of Studies was always cause for celebration, no chapter brought so much joy as this one, primarily due to the extensive amount of time and countless rewrites that it took to get right. Although I did have a rough structure of the review before I applied for ethical approval from

	<p>FREC and HRA, a final signed-off version of this chapter was not completed until late 2018. Given all of the variables, I was very uncomfortable while writing this chapter; however, I feel that my unease contributed to a stronger piece of work, as I was adamant about getting it right and did not rush the process. While I was self-critical while writing the review, I do think that it achieved the aim of identifying, synthesising and appraising the content, methodological arguments and assumptions found in the literature, and I have confidence in my ability to defend my approach and justify my decisions.</p>
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**Table 29: Reflections - Data Collection (Part One)**

<b>Diary Entry 15/02/2018</b>	<p><i>'Today, I was on-site for some of my first interviews at NHS Trust T2, where a lovely individual acted as my guardian for the day and introduced me around the headquarters where I met a lot of great people. However, at one point in the day, they randomly started discussing how much they dislike qualitative research and how that a typical qualitative project could be substituted with a 30-minute conversation with staff in a canteen. I was rather uncomfortable, and I did not know what to say, as they were not academic researchers, and they were doing me a massive favour by leading me around for the day, but it really bothered me that they had this negative perception of qualitative research. Now I'm wondering if most staff in the NHS Ambulance Services do not hold it in high regard and instead view it as a hippy-dippy alternative to quantitative work.'</i></p>
<b>Reflections</b>	<p>Upon reflection, as I was a bit new to this NHS Trust and did not want to step on any toes, it was understandable that I did not jump at the chance to defend qualitative research while listening to the rant of that individual. However, if a similar situation happened now, I know that I have the confidence to try and convey the strengths of qualitative research and how it can capture what quantitative methods, such as questionnaires, cannot. I remain unsure how staff in the NHS Ambulance Services view qualitative work overall; however, I know that the best chance at influencing their perceptions is by contributing a robust piece of qualitative research to the literature.</p>

**Table 30: Reflections - Data Collection (Part Two)**

<b>Diary Entry 03/07/2018</b>	<p><i>'Today, on the 3rd of July, I had an interview that went very well; however, following its completion, there was an incident which I had not expected but was able to handle. I conducted an interview over the phone with a participant from NHS Trust T3 from the management-level, and it flowed quite smoothly. Once completed, they were making conversation and asked what I planned to do with the data, and I went into a brief summary of my plans for dissemination. Immediately, the participant began to get audibly concerned</i></p>
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	<p>and started talking about how they were going to lose their job and how the executive staff were going to be able to identify them from the interview. Just to note, they did not say anything during the interview that could be considered overly critical, harsh or incendiary, and at one point just suggested that the executives should change their approach concerning feedback. However, it was clear that they were incredibly worried and did not understand how their responses would be used in the study. I decided to be very calm and reassuring and discussed how I completely understand how they would be nervous, however, that under no circumstance would they be identifiable by anyone. I covered the ethical approval process, the anonymisation of the transcripts, and how participants were assigned unique identifier codes, such as [B2-T3], for example. I then added how they did not have to consent to their interview being used, and that they could tell me if they wanted me to dispose of the audio file and I would do so immediately. They then became a little less concerned and more calm, adding that they did not want to waste the interview. I then asked if they had any questions and that I would be more than happy to answer any questions that came up in the future. Following the end of our call, I sat down at my computer and emailed them, reiterating all the points I made previously and that I would hold off on transcribing their interview to give them time to think about their decision. They emailed back after an hour or so thanking me for the reassurance and that they are now okay with being a part of the interview. I made a point to bring this up in the next supervisory meeting, as this situation came entirely out of the blue!</p>
<b>Reflections</b>	<p>Reflecting on this moment, I am incredibly fortunate that this situation did not happen until nearer the end of data collection when my skills as an interviewer had become more developed and refined. I am very proud of how I handled this situation, as I was calm, confident, knew what to say and most importantly, reassured the participant that their data was completely confidential. I do have a long way to go to become a better interviewer; however, looking back on moments like these, I realise how far I have come since the initial pilot interviews in September 2017.</p>

**Table 31: Reflections - Data Analysis**

<b>Diary Entry 19/12/2018</b>	<p><i>'I just got out of my last supervision for the year. I feel like absolute garbage, and it definitely was the worst one I've ever had. I had written up some themes for my supervisors based on the coding I've been doing, and they told me, albeit very kindly and with great advice, that I'd need to redraft everything and possibly recode my 44 transcripts as well. Definitely going to push back my progress by at least a month, and I will be spending a good chunk of Christmas break in the office trying to fix it. They want me to send them three transcripts, and we will all compare our coding after the break to see if I'm on the right track. We've done this before, and I feel like we're going in circles. I know it will lead to a better interpretation and study in the end, and I love that they're trying to help me learn, but I'm sick, sad and desperately would</i></p>
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	<i>like nothing more than to lay down on a couch for about a week - but I can't afford the time! Ugh, what a shit day.'</i>
<b>Reflections</b>	Upon reflection, I was incredibly naive about how quickly I would be able to analyse this sizeable qualitative dataset. I remember that my external examiner for my progression viva emphasised caution when using the Framework Method approach, as it took their large and experienced team much longer than they expected initially. However, I think I was only hoping that I could get a hold on it faster than what was possible or likely. While this moment was awful, it was fundamentally important in my growth as a researcher and the strength of my analysis. My supervisors were right, and it needed to be redone, as I now have a much more sound idea of what I am doing. I think it is important also to highlight the contrast in my attitudes throughout the PhD, as I was a bit defeated at the registration stage and did not know if I could do it, whereas here, I was frustrated, but I knew what I needed to do to overcome the issue and was confident that I had the ability.

**Table 32: Reflections - Finishing Stage**

<b>Diary Entry</b> 23/06/2019	<i>'It is Sunday, and I am currently in my office writing while it's beautiful and warm! While I've been putting in twelve-hour days, getting in at 7 am and leaving to run home at 7 pm, I still feel guilty for every hour I'm not doing anything. Luckily, my supervisory team gave me a strict deadline last week to get a full draft of the thesis to them in three weeks, which is the best kind of motivation! However, to be more positive in my journal entries (it's never too late, right?), Megan got a job offer two days ago in London, and so we both have secured work, albeit in two separate cities. I am on track to finish my PhD within the three-year time frame, I have my examining panel lined up, and I've never had to pull an all-nighter....yet. I'm incredibly excited to put this PhD and all of the finished chapters together and can't wait to get back to having a life again. While incredibly stressed, I do feel happy about how far I've come since 2016, as well as am confident in my study and its progress and I should try to acknowledge the positive moments more often.'</i>
<b>Reflections</b>	While only a couple of months ago, I have come along way and have now mostly finished my PhD, with only a few formatting issues to iron out, as well as additional proof-reading and editing and so on (does it ever end!?). It is an incredible feeling to have something that I am very proud of submitting, especially given my despondent attitude captured in the early diary entries and my lack of confidence at the registration stage. While I have started a new job and am wrapping my head around that, I am beginning to prepare for my final viva, something that seemed unreachable at the start and now is an inevitable and daunting event.

While these tables only represent a fraction of the overall journal entries, they were selected to cover core aspects of the PhD research project, including the registration, data collection and analysis, as well as the writing-up stages. A point was made to capture low moments of the PhD in particular, as they illustrate the difficulties faced during the journey, as well as demonstrate the progress I have made throughout the three-years. The hope is that they provide insight into the processes involved in this study, including some of my decision-making, which guided and shaped the overall research. These entries also aimed to provide some understanding of the influence I had on the research, as some of the issues may not have emerged if a more experienced researcher had undertaken this study, for example. While the journal entries above illuminated my perceptions at specific points of the PhD, as well as my reflections back on these moments, the following section presents an overview of reflections after the study was completed.

### **7.3 REFLECTIONS FOLLOWING THE COMPLETION OF THE STUDY**

Before undertaking the research project, I was unsure of how the results would be received, or if they would have any meaningful impact on the literature or the NHS Ambulance Services, as it is only a small-scale qualitative study conducted by a PhD student. While I was bringing myself up to speed on the literature and learning about the services during the early stages of the studentship, including their research profile and perceptions of patient safety, I honestly did not know what to expect. The existing literature led me to believe that I would be studying a care setting which was leagues behind that of nursing, for example, where the staff knew nothing of research and who were not concerned with progressing and improving patient care. However, following the completion of the study, this perception could not have been more incorrect, as I have met a countless number of brilliant staff in the NHS Ambulance Services, and now understand their passion for research and improving patient safety. To illustrate this point, a particular quote that has stuck with me throughout this project was '*...it's an evolution rather than a revolution*' [A3-T1], as it accurately portrays the improvements to patient safety in the NHS Ambulance Services as something that needs to be continually worked on, of which participants appeared extremely cognisant.

Linking back to the preface of this thesis, I began this study with an uncertainty of how I would be received as a neophyte researcher and outsider of the NHS Ambulance Services with no clinical knowledge or experience. There were some fair questions raised about why



I would undertake this research if I were not a paramedic, as well as some criticisms of the qualitative research paradigm. However, overall, staff from all organisational levels were incredibly welcoming and eager to participate in academic research, regardless of my outsider status. My neophyte nature may have also represented a positive as less 'insider' knowledge and experience may have led to fewer value judgements and less bias within the interpretation of the data. As referenced within Shepard (2018), it appeared that participants were candid in their responses, and it was felt that they might have felt more relaxed knowing that I had no authoritative presence within the NHS Ambulance Services. It would be interesting to see if participants would be as at ease if a consultant paramedic or medical director conducted the same interviews, for example, who are both extremely knowledgeable and high-ranking within the services. In addition, it was felt that my outsider presence aided in minimising bias during the data analysis, as I had no previous resentment against any of the organisational levels of staff. This historical animosity between organisational levels was evident within the interviews as operational participants would commonly criticise management and executive-level staff, and vice versa.

As referenced in Table 29, I was reasonably anxious that staff in the NHS Ambulance Services might view my research as too subjective or lacking any clear findings, as they appeared to favour quantitative data over qualitative. I did feel that I would be successful disseminating my findings in journals, given the lack of literature in this area and the robustness of this study. However, as staff do not have time to access and read the information sent out by their organisations, I understood how unlikely it was that they would keep themselves updated on recent publications. In addition, as the findings would not inform their clinical practice, I felt that there was even less of a chance that operational staff in the NHS Ambulance Services would ever read the findings from this study. For these reasons, as well as because of my outsider status, I worried that my conclusions would not amount to real service improvements, nor influence the perceptions of staff, as it would never breakthrough beyond journals.

However, following the study's completion, I realise how mistaken I was as I now have confidence in the fundamental importance of my research, as well as in my ability to operationalise the findings. I am still in contact with many participants, including those at the executive level. For example, recently, I had a private conversation over Twitter with a staff member of the Clinical Directorate in NHS Trust T2, who on the 20th of June 2019,

said in a private message: *'Look forward to getting your results through and making sure people in [OMITTED - NHS Trust T2] get an opportunity to see if there are improvements we can make'*. The fact that staff are still interested in the findings, especially those in positions to affect actual change, has very much altered my perspective on the potential to at least make a small difference. Also, as this study is one of the first to capture the perceptions of patient safety from a range of organisational levels and across several Ambulance Service NHS Trusts, it is vital that I widely publish the findings in professional journals and reports, in addition to peer-reviewed journals, to provide a foundational for this area going forward.

While I am happy with the methodological approach I adopted, when developing the protocol for this study, I had first wanted to incorporate a quantitative element developed from the qualitative findings to evaluate whether the qualitative findings were generalisable beyond the views of the 44 participants (Atieno, 2009). However, given the extreme paucity of literature on this topic and the exploratory nature required to investigate it, the research necessitated a robust qualitative approach (Barker et al., 2002). As a PhD project with a structured three-year timeline, it was felt that the number of interviews would have had to have been reduced to incorporate a quantitative element. It was thought that this would have weakened the study as one of its main strengths is the fact that the views of staff are explored across all organisational levels and three Ambulance Service NHS Trusts (Fisher et al., 2015). I am confident that I made the correct choice, as the focus on generic qualitative inquiry enabled me to investigate this topic in-depth with the use of a methodology of which I have a deep understanding. However, following the completion of the study, I remain interested in developing a quantitative tool from the findings, or amending a validated survey tool, like the Safety Attitudes Questionnaire (SAQ), similar to the one used in Patterson et al. (2010), to investigate this topic within the NHS Ambulance Services further.

As noted within my reflections documented throughout the study, I was regularly unsure if I was the most suitable person to undertake this research project, given my unrelated background. However, now that the study is complete, I do not think a paramedic background was necessary, nor would it have represented a significant strength. As I came into this charged healthcare setting with minimal preconceived notions or biases about staff or the NHS Ambulance Services in general, I think my outsider nature ultimately

represented a strength. Upon reflection, common problems for neophyte researchers as documented within Sanders et al. (2017), including navigating workplace spaces, confronting the unknown, finding a role and workplace ethics, proved to be mostly unrealised. As demonstrated in Shepard (2018), the most significant issue was understanding acronyms and clinical jargon, as well as some of the nuances of the service complexities. However, as documented earlier, doing a PhD at Edge Hill University afforded me access to paramedic lecturers and researchers, whom all provided me with ample opportunity to ask questions and update myself concerning the content of interviews and the broader literature. Without their continual help, it is expected that my neophyte nature would have posed significant problems, of which I would have had to overcome using other means.

## **7.4 CHAPTER SUMMARY**

The Reflections of the Researcher Chapter (Chapter 7) provides a summary of the reflective approach adopted throughout the PhD study, as well as some insight into my influence on the research processes and findings. Writing this chapter has been a cathartic and refreshing experience as it was an incredible opportunity to go through and read my thoughts, opinions and experiences documented throughout the previous three-years. As this PhD research project was the collective sum of so many distinctive and separate parts, it was easy to compartmentalise each event and view them in isolation. However, while reading and collating journal entries, it brought everything, including the interviews, writing, frustrations, supervision, successes, analysis and everything else, together. It also provided a fantastic opportunity to review my motivations for undertaking the project, the problems I encountered along the way and my personal growth and development, which is easy to overlook over an extended period. While attaining a PhD affords a researcher three extra letters after their name, the three-letter qualification oversimplifies the work put into it. Therefore, the process of the struggle required to achieve this degree should be captured and remembered to reinforce its value as suggested by Ortlipp (2008) and Boden, Kenway and Epstein (2005).

## 7.5 FINAL WORD

As emphasised throughout this thesis, while it is growing, there is still a significant paucity of research in the ambulance and emergency services when compared to other care settings (Bigam et al., 2011; 2012; Fisher et al., 2015; Hofoss and Deilkås, 2008; Illingworth, 2015). This substantial gap also extends to the patient safety literature, as a majority of research has been based on data from hospitals and primary care settings, where the findings are not always generalisable given the unique nature of the NHS Ambulance Services, requiring that additional work is done in this setting (Altman, Clancy, and Blendon, 2004; Bigam et al., 2012; Brickell et al., 2009; Fisher et al., 2015; Rust et al., 2008). This study has explored and captured the perceptions of patient safety of staff across three organisational levels and Ambulance Service NHS Trusts in England. The findings demonstrate that the perceptions of patient safety comprised five main areas, including the interpretation and understanding of patient safety, significant patient safety risks, reporting culture and its perceived shift, communication and organisational culture. It was clear that while the perceptions of patient safety by staff largely remained the same across the three Ambulance Service NHS Trusts, they varied widely according to the organisational level of executive, management or operational staff.

It was evident that the perceptions of participants concerning patient safety in the NHS Ambulance Services were much more positive than the broader literature suggested. While the NHS Ambulance Services have undergone fundamental changes in the previous decades, including their integration into the NHS, the restructuring into ten Ambulance Service NHS Trusts and the introduction of a degree educated paramedic workforce, it was apparent that the perceptions of patient safety were also shifting. The services continue to face significant patient safety challenges, mainly stemming from the historical remnants of its organisational and cultural legacy, as well as the operational pressures from the growing demand; however, they appear to be moving in a positive direction. In particular, this change has been noted in the reporting culture, as participants in this study perceived that blame culture was now either eliminated or is in the process of being minimised. Although progress is being made, the increasing amount of 999 calls has had a noticeable impact on all perceptions of patient safety, as participants noted its pervasive influence on communication, organisational culture, reporting incidents and more. However, while it was evident that the demand had an impact on most of the dominant themes representing the

perceptions of patient safety, its impact was most prominent concerning the significant risk it presents to patients, as well as to staff communication.

While a small-scale qualitative study, the findings from this research have made a significant contribution to the minimal available literature concerning the staff perceptions of patient safety in the NHS Ambulance Services. As documented in the Findings Chapter (Chapter 4) and Discussion Chapter (Chapter 5), these findings have highlighted the following: a varied interpretation and understanding of patient safety by staff across organisational levels, issues perceived as representing significant risks to patient safety, that reporting culture is seen to be improving, as well as the issues facing communication and organisational culture and solutions to address them. Recommendations for future research based upon these findings are underscored within the previous chapter and demonstrate sound suggestions based upon the responses of participants, including areas concerning the reporting of incidents, staff attrition and communication, for example. Recommendations for policy, practice and education were also emphasised within the previous chapter; however, further research is necessary as significant changes cannot be advocated based on a single qualitative study. It is expected that research in this area will continue to grow as the research profile of the NHS Ambulance Services develops further, and it is hoped that the findings highlighted in this study will guide and inform similar research going forward.

To conclude, while this PhD has been an academically stimulating and challenging process, I feel so privileged and grateful to have been able to develop my knowledge and skills as a researcher by exploring this topic within the NHS Ambulance Services. Although arguably a small qualitative research project, it provides a deepened insight into staff perceptions of patient safety which had not been previously explored. The overarching hope is that it offered a voice to all participants in the study, especially those in lower-level positions, who may feel unheard or unable to express their thoughts to higher-level staff, and that it may ultimately contribute to real service improvements.

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## Appendices

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### Appendix A: Ethical Approval Documents - FREC

Edge Hill  
University

Keegan Shepard

9<sup>th</sup> May 2017

Dear Keegan,

Thank you for submitting your research ethics application '*An exploration of the perceptions of patient safety within the NHS ambulance services*' (FOHS 173) to the Faculty of Health & Social Care Research Ethics Committee.

I have pleasure in informing you that the Committee recommended that your study is granted Faculty of Health & Social Care research ethics approval, subject to the following conditions:

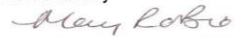
1. Ethical approval covers only the original study for which it is sought. If the study is extended, changed, and / or further use of samples or data is needed the Committee Administrator, Daniel Brown, must be contacted for advice as to whether additional ethical approval is required.
2. (NHS studies only) NHS Research governance processes must be adhered to. An application must be made to the HRA for approval for the research to be conducted in the NHS. All NHS R&D departments (in Trusts where data is being collected) will also need to be approached for Trust permission to proceed.
3. If the project requires HRA approval and/or NHS ethical approval, please forward evidence of the approval(s) to Daniel Brown ([browdan@edgehill.ac.uk](mailto:browdan@edgehill.ac.uk)) before commencing the study
4. The Principle Investigator is responsible for ensuring that all data are stored and ultimately disposed of securely in accordance with the Data Protection Act (1998) and as detailed within the approved proposal.
5. The Principle Investigator is responsible for ensuring that an annual monitoring form and an end of study form, where appropriate, is sent to the Committee Administrator ([browdan@edgehill.ac.uk](mailto:browdan@edgehill.ac.uk)). The form will be sent to you at the appropriate time by the Committee Administrator.
6. Ethical approval for this research will expire on 31/08/2019. Any extensions to this date will require additional approval from the committee.

The study documentation that has been reviewed and approved is detailed below:

<doc title>	<version no & date>
Research Proposal	V2, May 2017

Appendix A – Consent Form	<b>V2, May 2017</b>
Appendix B – Interview Schedule	<b>V1, April 2017</b>
Appendix C – Participant Information Sheet	<b>V2, May 2017</b>
Appendix D – Participant Invitation Letter	<b>V1, April 2017</b>
Appendix E – Reference List	<b>V1, April 2017</b>

Yours sincerely



Professor Mary O'Brien

Chair of Faculty of Health & Social Care Research Ethics Committee  
Edge Hill University  
St Helens Road  
Ormskirk  
Lancashire  
L39 4QP  
[obrienm@edgehill.ac.uk](mailto:obrienm@edgehill.ac.uk)



## Appendix B: Ethical Approval Documents - HRA



**Health Research Authority**

Mr Keegan Shepard  
Room H116 - Faculty of Health and Social Care  
Edge Hill University  
St Helens Road, Ormskirk  
L39 4QP

Email: [hra.approval@nhs.net](mailto:hra.approval@nhs.net)

18 August 2017

Dear Keegan,

### Letter of **HRA Approval**

<b>Study title:</b>	<b>An exploration of staff perceptions of patient safety in three Ambulance Service NHS Trusts in England.</b>
<b>IRAS project ID:</b>	<b>227289</b>
<b>REC reference:</b>	<b>18/HRA/0155</b>
<b>Sponsor</b>	<b>Edge Hill University</b>

I am pleased to confirm that **HRA Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

#### **Participation of NHS Organisations in England**

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

*Appendix B* provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. **Please read *Appendix B* carefully**, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

It is critical that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details

and further information about working with the research management function for each organisation can be accessed from [www.hra.nhs.uk/hra-approval](http://www.hra.nhs.uk/hra-approval).

### Appendices

The HRA Approval letter contains the following appendices:

- A – List of documents reviewed during HRA assessment
- B – Summary of HRA assessment

### After HRA Approval

The attached document *"After HRA Approval – guidance for sponsors and investigators"* gives detailed guidance on reporting expectations for studies with HRA Approval, including:

- Working with organisations hosting the research
- Registration of Research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics and is updated in the light of changes in reporting expectations or procedures.

### Scope

HRA Approval provides an approval for research involving patients or staff in NHS organisations in England.

If your study involves NHS organisations in other countries in the UK, please contact the relevant national coordinating functions for support and advice. Further information can be found at <http://www.hra.nhs.uk/resources/applying-for-reviews/nhs-hsc-rd-review/>.

If there are participating non-NHS organisations, local agreement should be obtained in accordance with the procedures of the local participating non-NHS organisation.

### User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: <http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/>.

### HRA Training

We are pleased to welcome researchers and research management staff at our training days – see details at <http://www.hra.nhs.uk/hra-training/>

Your IRAS project ID is **227289**. Please quote this on all correspondence.

IRAS project ID	227289
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Yours sincerely

Nabeela Iqbal  
Assessor

Email: [hra.approval@nhs.net](mailto:hra.approval@nhs.net)

Copy to:



*R&D contact*

Nikki Craske, Edge Hill University, Sponsor contact

## Appendix A - List of Documents

The final document set assessed and approved by HRA Approval is listed below.

<i>Document</i>	<i>Version</i>	<i>Date</i>
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Evidence of Insurance]	1.0	
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Evidence of Professional Indemnity]	1.0	
HRA Schedule of Events [Validated SOE]	1.0	18 August 2017
HRA Statement of Activities [Validated SOA]	1.0	18 August 2017
Interview schedules or topic guides for participants [Interview schedule]	1.0	
IRAS Application Form [IRAS_Form_06072017]		06 July 2017
Other [Flyer]	2.0	17 July 2017
Participant information sheet (PIS) [PIS]	1.0	
Research protocol or project proposal [Research proposal FoHSC]	1.0	
Summary CV for Chief Investigator (CI) [CV - Keegan Shepard]	1.0	
Summary CV for supervisor (student research) [CV - Carol Kelly]	1.0	
Summary CV for supervisor (student research) [CV - Paresh Wankhade]	1.0	
Summary CV for supervisor (student research) [CV - Sally Spencer]	1.0	

## Appendix B - Summary of HRA Assessment

This appendix provides assurance to you, the sponsor and the NHS in England that the study, as reviewed for HRA Approval, is compliant with relevant standards. It also provides information and clarification, where appropriate, to participating NHS organisations in England to assist in assessing and arranging capacity and capability.

**For information on how the sponsor should be working with participating NHS organisations in England, please refer to the, *participating NHS organisations, capacity and capability and Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria) sections in this appendix.***

The following person is the sponsor contact for the purpose of addressing participating organisation questions relating to the study:

Name: Nikki Craske  
 Tel: 01695650925  
 Email: crasken@edgehill.ac.uk

### HRA assessment criteria

Section	HRA Assessment Criteria	Compliant with Standards	Comments
1.1	IRAS application completed correctly	Yes	No comments
2.1	Participant information/consent documents and consent process	Yes	No comments
3.1	Protocol assessment	Yes	No comments
4.1	Allocation of responsibilities and rights are agreed and documented	Yes	The SOA will act as an agreement between sites.
4.2	Insurance/indemnity arrangements assessed	Yes	Where applicable, independent contractors (e.g. General Practitioners) should ensure that the professional indemnity provided by their medical defence organisation covers the activities expected of them for this research study

Section	HRA Assessment Criteria	Compliant with Standards	Comments
4.3	Financial arrangements assessed	Yes	No funding will be provided to site as detailed in Schedule 1 of the SOA.
5.1	Compliance with the Data Protection Act and data security issues assessed	Yes	No comments
5.2	CTIMPS – Arrangements for compliance with the Clinical Trials Regulations assessed	Not Applicable	No comments
5.3	Compliance with any applicable laws or regulations	Yes	No comments
6.1	NHS Research Ethics Committee favourable opinion received for applicable studies	Not Applicable	This is a non-REC study.
6.2	CTIMPS – Clinical Trials Authorisation (CTA) letter received	Not Applicable	No comments
6.3	Devices – MHRA notice of no objection received	Not Applicable	No comments
6.4	Other regulatory approvals and authorisations received	Not Applicable	No comments

### Participating NHS Organisations in England

*This provides detail on the types of participating NHS organisations in the study and a statement as to whether the activities at all organisations are the same or different.*

This is a single site type study, and all research activity will be conducted in accordance to the protocol.

The Chief Investigator or sponsor should share relevant study documents with participating NHS organisations in England in order to put arrangements in place to deliver the study. The documents should be sent to both the local study team, where applicable, and the office providing the research management function at the participating organisation. For NIHR CRN Portfolio studies, the Local LCRN contact should also be copied into this correspondence. For further guidance on working with participating NHS organisations please see the HRA website.

If Chief Investigators, sponsors or Principal Investigators are asked to complete site level forms for participating NHS organisations in England which are not provided in IRAS or on the HRA website, the Chief Investigator, sponsor or Principal Investigator should notify the HRA immediately at [hra.approval@nhs.net](mailto:hra.approval@nhs.net). The HRA will work with these organisations to achieve a consistent approach to information provision.

### Confirmation of Capacity and Capability

*This describes whether formal confirmation of capacity and capability is expected from participating NHS organisations in England.*

Participating NHS organisations in England) **will be expected to formally confirm their capacity and capability** to host this research.

- The sponsor should ensure that participating NHS organisations are provided with a copy of this letter and all relevant study documentation, and work jointly with NHS organisations to arrange capacity and capability whilst the HRA assessment is ongoing.
- Further detail on how capacity and capability will be confirmed by participating NHS organisations, following issue of the Letter of HRA Approval, is provided in the *Participating NHS Organisations and Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* sections of this appendix.
- The [Assessing, Arranging, and Confirming](#) document on the HRA website provides further information for the sponsor and NHS organisations on assessing, arranging and confirming capacity and capability.

### Principal Investigator Suitability

*This confirms whether the sponsor's position on whether a PI, LC or neither should be in place is correct for each type of participating NHS organisation in England, and the minimum expectations for education, training and experience that PIs should meet (where applicable).*

A local collaborator (LC) is required for this study. LCs have been identified at sites.

GCP training is not a generic training expectation, in line with the [HRA statement on training expectations](#).

IRAS project ID	227289
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### HR Good Practice Resource Pack Expectations

*This confirms the HR Good Practice Resource Pack expectations for the study and the pre-engagement checks that should and should not be undertaken.*

The PhD student with no contractual arrangements with the NHS undertaking research would be expected to obtain a Letter of Access on the basis of a Research Passport. Standard DBS checks and occupational health would not be appropriate as activity is limited to staff interviews at site.

### Other Information to Aid Study Set-up

*This details any other information that may be helpful to sponsors and participating NHS organisations in England to aid study set-up.*

The applicant has indicated that they do not intend to apply for inclusion on the NIHR CRN Portfolio.



## Appendix C: Research Governance - Letters of Access



NHS

Headquarters



Dear Professor Spencer

Re: Keegan Shepard, PhD Student



This letter is to confirm the arrangement between this NHS organisation and Edge Hill University whereby your PhD student Keegan Shepard, is permitted to conduct Research activities in line with the agreed service level agreement and R&D approvals in this [redacted] [redacted] not require an honorary contract with [redacted]

We offer a right of access to your student to perform research activities in this organisation in accordance with the clauses below. Your student has a right of access to conduct such activity as is confirmed in writing in the service level agreement.

You are responsible for ensuring that such checks as you consider necessary for the research activities of your student has been carried out, and we require you to undertake the necessary checks commensurate with the activities your student will be conducting [redacted] we will require you to conduct additional checks if the named activities of your staff in [redacted] or substantially from the current research activities of your student. We agree to accept the checks undertaken by you, in order to enable your student to undertake the research activities [redacted] they are not entitled to any form of payment or access to other benefits provided by [redacted] employees and this letter does not give rise to any other relationship between them and [redacted] particular that of employees.

While undertaking the research activities through [redacted] your student will be accountable to you as their employer but they will be required to follow the reasonable instructions of an appropriate head of department or supervisor or those given on her/his behalf in relation to the terms of this right of access. Receipt of this letter confirms that research can begin according to the agreed protocol.

Where any third party claim is made, whether or not legal proceedings are issued, arising out of or in connection with the right of access, your student is required to co-operate fully with any investigation by us in connection with any such claim and to give all such assistance as may reasonably be required by us regarding the conduct of any legal proceedings.

Your student must act in accordance with our policies and procedures which are available to them



Your student is required to co-operate with us in discharging our duties under the Health and Safety at Work Act 1974 and other health and safety legislation and to take reasonable care for the health and safety of themselves and others while on our premises. Your student must observe the same standards of care and propriety in dealing with staff, visitors, equipment and premises as is expected of any other contract holder and they must act appropriately, responsibly and professionally at all times.

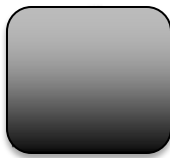
Your student is required to ensure that all information regarding [redacted] staff remains *secure and strictly confidential* at all times. They must ensure that they understand and comply with the requirements of the NHS Confidentiality Code of Practice ([http://www.ecric.nhs.uk/docs/nhs\\_conf\\_code.pdf](http://www.ecric.nhs.uk/docs/nhs_conf_code.pdf)) and the Data Protection Act 1998. Any breach of the Data Protection Act 1998 may result in legal action against your staff and/or you as the substantive employer.

We accept no responsibility for damage or loss to the personal property of your student.

We may terminate the right of your student to attend at any time either by giving seven days written notice to them or immediately without notice if they are in breach of any of the terms or conditions described to them or if they commit any act which we reasonably consider to amount to serious misconduct or to be disruptive and/or prejudicial to our interests and/or business or if they are convicted of any criminal offence.

Your student must inform us of any changes to their circumstances in relation to their health, criminal record, professional registration or any other aspect that may impact on their suitability to conduct the research activities.

Yours Sincerely





Research & Development

13 September 2017




Keegan Shepard BBA, MPH  
Graduate Teaching Assistant/PhD Student  
Room H116  
Edge Hill University  
Faculty of Health & Social Care  
St Helens Road, Ormskirk  
L39 4QP


shepardk@edgehill.ac.uk

Dear Keegan,

**Re: An exploration of staff perceptions of patient safety in three  
Ambulance Service NHS Trusts in England.**

 IRAS 227289

I am happy to confirm that  has risk  
assessed our capacity and capability to participate in this study, and agrees to  
participate.

We have received the Statement of Activities, and attach a completed version  
with this letter to the email confirming our participation.  agrees that no  
further contractual arrangements are necessary for this study.

I would like to take this opportunity to wish the project every success.

Yours sincerely



Cc: *Nikki Craske*

(Sponsor representative)



**Private and Confidential**

18 September 2017

Dear Keegan Shepherd,

**Letter of access for research**

This letter confirms your right of access to conduct research through [redacted] NHS Trust for the purpose and on the terms and conditions set out below. This right of access commences on 18/09/2017 and ends on 31/01/2020 unless terminated earlier in accordance with the clauses below.

You have a right of access to conduct such research as confirmed in writing in the letter of permission for research from this NHS organisation. Please note that you cannot start the research until the Principal Investigator for the research project has received a letter from us giving permission to conduct the project.

The information supplied about your role in research at [redacted] has been reviewed and you do not require an honorary research contract with this NHS organisation. We are satisfied that such pre-engagement checks as we consider necessary have been carried out.

You are considered to be a legal visitor to [redacted]. You are not entitled to any form of payment or access to other benefits provided by this NHS organisation to employees and this letter does not give rise to any other relationship between you and this NHS organisation, in particular that of an employee.

While undertaking research through [redacted] you will remain accountable to your employer Edge Hill University but you are required to follow the reasonable instructions of the Head of Research and Development in this NHS organisation or those given on her/his behalf in relation to the terms of this right of access.

Where any third party claim is made, whether or not legal proceedings are issued, arising out of or in connection with your right of access, you are required to co-operate fully with any investigation by this NHS organisation in connection with any such claim and to give all such assistance as may reasonably be required regarding the conduct of any legal proceedings.

You must act in accordance with [redacted] policies and procedures, which are available to you upon request, and the Research Governance Framework.

You are required to co-operate with [redacted] in discharging its duties under the Health and Safety at Work etc Act 1974 and other health and safety legislation and to take reasonable care for the health and safety of yourself and others while on [redacted] Ambulance Service NHS Trust premises. You must observe the same standards of care and propriety in dealing with patients, staff, visitors, equipment and premises as is expected of any other contract holder and you must act appropriately, responsibly and professionally at all times.




You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice (<http://www.dh.gov.uk/assetRoot/04/06/92/54/04069254.pdf>) and the Data Protection Act 1998. Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

You should ensure that, where you are issued with an identity or security card, a bleep number, email or library account, keys or protective clothing, these are returned upon termination of this arrangement. Please also ensure that while on the premises you wear your ID badge at all times, or are able to prove your identity if challenged. Please note that this NHS organisation accepts no responsibility for damage to or loss of personal property.

We may terminate your right to attend at any time either by giving seven days' written notice to you or immediately without any notice if you are in breach of any of the terms or conditions described in this letter or if you commit any act that we reasonably consider to amount to serious misconduct or to be disruptive and/or prejudicial to the interests and/or business of this NHS organisation or if you are convicted of any criminal offence. Where required by law, your HEI employer will initiate your Independent Safeguarding Authority (ISA) registration, and thereafter, will continue to monitor your ISA registration status via the on-line ISA service. Should you cease to be ISA-registered, this letter of access is immediately terminated. Your employer will immediately withdraw you from undertaking this or any other regulated activity. You **MUST** stop undertaking any regulated activity.

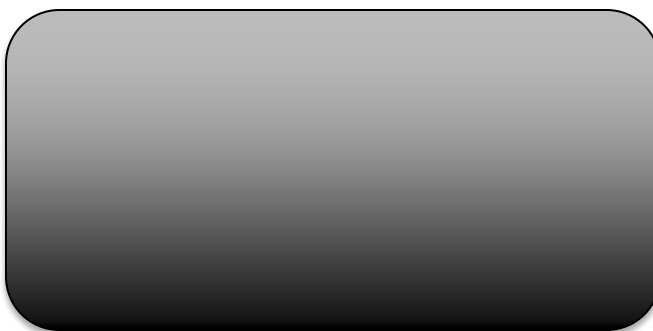
Your substantive employer is responsible for your conduct during this research project and may in the circumstances described above instigate disciplinary action against you.

 will not indemnify you against any liability incurred as a result of any breach of confidentiality or breach of the Data Protection Act 1998. Any breach of the Data Protection Act 1998 may result in legal action against you and/or your substantive employer.

If your current role or involvement in research changes, or any of the information provided in your Research Passport changes, you must inform your employer through their normal procedures. You must also inform your nominated manager in this NHS organisation.

Yours sincerely





Dear Keegan,

**Re: An exploration of staff perceptions of patient safety in three Ambulance Service NHS Trusts in England.**

I am pleased to inform you that your research project proposal, '*An exploration of staff perceptions of patient safety in three Ambulance Service NHS Trusts in England.*' now has Trust Research & Development (R&D) approval to be carried out in the [redacted]

**Ethical approval**

As previously advised, your project can proceed without the need for ethical approval as this project can be classified as a research project utilising NHS staff as participants.

**Local approvals**

Trust R&D approval for your project is subject to the approval of local [redacted] management remaining in place for the entire duration of the project.

**Legislation**

You must adhere at all times to the principles and standards of the Department of Health's *Research Governance Framework (2<sup>nd</sup> edition)*. You are also reminded of your obligation to collect, use, store and protect all research data in accordance with the Data Protection Act 1998, the Human Rights Act 1998, and all other legislation that applies to your project.

**Circumstances to notify to the R&D Co-ordinator**

During the course of the project you must inform [redacted] R&D Co-ordinator, immediately:

- If your research deviates from that laid out in the approved proposal, for any reason, at any time.
- If you encounter any problems or unexpected delays.
- Of any adverse incidents or near misses arising from the project. These will be dealt with according to current [redacted] policy.



### Amendments

If you wish to make an amendment to your project, for example to recruit at new [redacted] sites or change the protocol in any way, please contact the R&D Co-ordinator prior to implementing the amendment to arrange for Trust R&D approval to be issued.

### Monitoring and auditing

All research undertaken in the [redacted] is subject to monitoring for research governance purposes. The R&D coordinator will contact you on a monthly basis to request recruitment figures.

A random selection of projects will also be selected for a Research & Development Audit, as outlined in the [redacted] Researcher's Handbook. Failure to respond to correspondence regarding monitoring or auditing will result in [redacted] permission and support for your research to be undertaken being withdrawn.

### Sponsorship and Supervision

The Sponsor for the research is Edge Hill University and they have confirmed in writing that they will fulfil their responsibilities under the Research Governance Framework. You should contact the [redacted] Co-ordinator for the day to day supervision of the research and should be contacted in the first instance should you require any advice or assistance.

### Final report and publications procedure

Finally, you are reminded of the procedure for the review of final reports and of publications arising from the project. Adherence to this procedure is a condition of the [redacted] giving permission for you to proceed with your project.

The final report must be forwarded to me as soon as it is completed. This will then be reviewed by our Clinical Audit and Research Steering Group (CARSG) and feedback will be given. You must not publish or disseminate your final report until CARSG have given their approval to do so. Similarly, all papers, articles or presentations arising from the research must be forwarded to me prior to submission so that I can arrange review and approval by CARSG.

I wish you every success in your project.



# What do you think about Patient Safety?



## ***PARTICIPATE IN RESEARCH!***

**Consider participating in a study about patient safety**

### **What is this study about?**

The goal of this study is to explore your views and understanding of patient safety in the NHS Ambulance Services

### **Who can participate?**

People employed by the NHS Ambulance Services who have experience of patient safety, either directly or in reporting, governance or policies

### **What is involved?**

Participants will provide data once at a face-to-face interview which should take no longer than 60 minutes to complete. The results of this interview will be kept strictly confidential, with any identifiable information being completely anonymised

### **What are the benefits of participating?**

Help us gain a better understanding of patient safety, inform further research and identify ways to improve future patient safety policy and practice

### **How do I get involved?**

If you are interested in taking part, or if you have any questions, please contact Keegan Shepard, a PhD Student leading this research project at Edge Hill University, by any of the following options:

- **Email:** [shepardk@edgehill.ac.uk](mailto:shepardk@edgehill.ac.uk)
- **Phone:** 01695 650960



**Edge Hill University**

Keegan Shepard – July 2017 – Version 2 – IRAS Number: 227289

### **Chief Investigator:**

Keegan Shepard  
PhD Student  
Edge Hill University





## **Appendix E: Text Used for Advertising Study (Edited by NHS Trust Staff)**

All staff wanted for patient safety research!

PhD researcher Keegan Shepard, is currently recruiting all levels of staff (operational, management, executive) to participate in a short face-to-face or phone interview concerning patient safety. The research aims to explore and characterise your perceptions, knowledge and understanding of patient safety in NHS ambulance services, regarding things around reporting patient safety incidents, organisational and patient safety culture, barriers and facilitators, communication, its meaning and prioritisation. The hope is that this research will provide insight on how all levels of staff in the services view patient safety, generating results that can later be utilised in developing strategies and policies to address any of the issues raised.

Anyone is welcomed to participate that has a role connected to patient safety, as it is essential to hear from all levels within the services and not just one!

Responses will be kept completely anonymous, with a final report being sent to you following its completion.

**For additional information or to register your interest, please email Keegan Shepard at [shepardk@edgehill.ac.uk](mailto:shepardk@edgehill.ac.uk), or phone 01695 650960.**

## Appendix F: Interview Schedule

### Edge Hill University

*An exploration of the perceptions of patient safety within the NHS ambulance services.*

#### Interview Schedule

##### Introduction

*Introduction of self and study, and reassurance of measures taken to protect anonymity. Thank them for taking the time to talk about their perceptions of patient safety in the NHS ambulance services.*

##### Demographic information

*Could you please tell me about yourself?*

*Age  
Gender  
Nationality  
Professional role  
Duration of employment  
Level of education achieved  
Ambulance Service NHS Trust*

##### Patient Safety

*Understanding and interpretation of the term 'patient safety' in their professional role*

*The most important risks to patient safety*

##### Patient Safety Incidents

*Causes of patient safety incidents and participants' knowledge of reporting procedures & support systems*

*Importance of patient safety within immediate team*

*Perception of a blame culture surrounding patient safety incidents*

*Familiarity with the National Reporting and Learning System, e.g. figures on patient safety incidents*

##### Organisational and Safety Culture

*Organisational patient safety culture: perception, knowledge, prioritisation, organisational learning*

*Barriers and facilitators: what doesn't work and how could it work better*

*Perception of the influence of communication and teamwork on patient safety*

##### Recommendations and Conclusions

*Do you have any suggestions to improve patient safety within your organisation?*

*Are you able to tell me any additional information about patient safety in your organisation?*

*These topics are a guide to stimulate naturalistic conversation that will be probed further depending on the responses of each individual participant.*

## Appendix G: Research Passport


### Research Passport Application Form – Version 3 01/09/2012

Please refer to the guidance notes before completing the form.

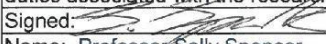
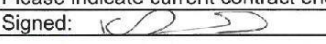
Section 1 - Details of Researcher To be completed by Researcher			
1.	Surname: Shepard Forename(s): Keegan		Prof <input type="checkbox"/> Dr <input type="checkbox"/> Mr <input checked="" type="checkbox"/> Mrs <input type="checkbox"/> Miss <input type="checkbox"/> Ms <input type="checkbox"/> Other <input type="checkbox"/>
Home Address: 3 Mission Cottages Moss Lane Burscough, Ormskirk United Kingdom L40 4AZ			
Work Tel: 01695 650960 shepardk@edgehill.ac.uk		Mobile: 07511532239	Email:
2.	Date of birth: 1 [REDACTED]	Gender: Male <input checked="" type="checkbox"/> Female <input type="checkbox"/>	National Insurance number: [REDACTED]
Ethnicity: Caucasian			
3.	Professional registration details, if applicable (Doctors undertaking any form of medical practice should confirm they have a licence to practise). N/A <input checked="" type="checkbox"/>		
4.	Employer: Edge Hill University or place of study: Edge Hill University Work Address/Place of Study: Room H016, Edge Hill University, Faculty of Health & Social Care St Helens Road, Ormskirk, L39 4QP Post or status held: PhD Student and Graduate Teaching Assistant		
Section 2 - Details of Research To be completed by Researcher			
5.	What type of Research Passport do you need? Project-specific <input checked="" type="checkbox"/> Multi-project <input type="checkbox"/> <i>If you will be conducting one project only please complete the details below. If you anticipate that you will be undertaking more than one project at any one time, please give details in the Appendix.</i>		
Project Title: An exploration of staff perceptions of patient safety in three Ambulance Service NHS Trusts in England.			
Project Start Date: 11/09/2017		End Date: 31/1/2020	
Proposed start and end-date of 3-year Research Passport: Start Date: 11/09/2017 End Date: 31/1/2020			
NHS organisation(s):	Dept(s):	Proposed research activities:	Manager in NHS organisation:
[REDACTED]	[REDACTED]	Promotion of study, allowing staff recruitment, permitting and hosting staff interviews	[REDACTED]
[REDACTED]	[REDACTED]	Promotion of study, allowing staff recruitment, permitting and hosting staff interviews	[REDACTED]
[REDACTED]	[REDACTED]	Promotion of study,	[REDACTED]

The Research Passport is a document that is used to record the details of a research project and the researcher's contact information.

Page 1 of 8

		allowing staff recruitment, permitting and hosting staff interviews	
<b>Section 3 – Declaration by Researcher</b> <i>To be completed by Researcher</i>			
6.	Have you ever been refused an honorary research contract?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
	Have you ever had an honorary research contract revoked?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes to either question, please give details:			
I consent to the information provided as part of this Research Passport and attached documents being used, recorded and stored by authorised staff of the NHS organisations where I will be conducting research.			
Signed: 		Date: 12/09/2017	
When Sections 1-3 have been completed, the researcher should forward the form to the appropriate person to complete Section 4.			



Section 4 - Suitability of Researcher	
To be completed by researcher's substantive employer, e.g. line manager, or academic supervisor	
7.a	Will this person's research activity mean that they may be undertaking regulated activity with children and/or adults as defined in the Safeguarding Vulnerable Groups Act 2006, as amended (in particular by the Protection of Freedoms Act 2012)? (please use the Research Passport algorithm to make this judgement)
	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
7.b	I am satisfied that the above named individual is suitably trained and experienced to undertake the duties associated with the research activities outlined in this Research Passport form.
	Signed:  Date: 12/09/17
	Name: Professor Sally Spencer Job Title: Professor of Clinical Research PGMI
	Department and Organisation: Faculty of Health and Social Care
	Address: H006 Edge Hill University Faculty of Health & Social Care St Helens Road, Ormskirk L39 4QP
	Tel No: 01695 657061 Email: Sally.Spencer@edgehill.ac.uk
	Managerial responsibility for the applicant: Director of Studies
When Section 4 has been completed, the researcher should forward the form to the appropriate person to complete Section 5.	
Section 5 - Pre-engagement checks To be completed by the HR department of the researcher's substantive employer or registry at place of study	
8.	Does the above named individual's research involve Regulated Activity with children and/or adults as defined in the Safeguarding Vulnerable Groups Act 2006, as amended (in particular by the Protection of Freedoms Act 2012)?
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	If yes to the above, has the above named individual been checked against ISA barred lists for adults and/or children, as appropriate and have you received confirmation via the criminal record disclosure that the person is not barred from working with adults and/or children? (NB individuals who are barred from working with adults or children must not undertake a regulated activity in the NHS with the vulnerable group from which they are barred, and you must not submit a Research Passport form in such cases).
	Checked against: ISA Adults List? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> ISA Children's List? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
	Can you confirm that a clear criminal record disclosure has been obtained for the above-named individual, with no subsequent reports from the individual of changes to this record? NB for Regulated Activity this must be an enhanced level criminal record check. For non-regulated activity, ensure the criminal record check is at the mandated level.
	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
	If yes, please provide details of the clear disclosure:
	Date of disclosure: Type of disclosure:
	Disclosure No.: Organisation that requested disclosure:
9.	Have the pre-engagement checks described below been carried out with regard to the above-named individual and is confirmation of the necessary checks, including any required satisfactory documentary evidence, available in the employing organisation's/place of study's records?
	<div> <div>Employment/student screening:</div> <div> <div>ID with photograph</div> <div>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></div> </div> <div> <div>two references</div> <div>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></div> </div> <div> <div>verification of permission to work/study in the UK</div> <div>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></div> </div> <div> <div>exploration of any gaps in employment</div> <div>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></div> </div> <div> <div>Evidence of current professional registration</div> <div>Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/></div> </div> <div> <div>Evidence of qualifications</div> <div>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></div> </div> <div> <div>Occupational health screening / clearance</div> <div>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></div> </div> </div>
	Is the named individual on a fixed term contract or is the contract end imminent? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	Please indicate current contract end-date Date: 31/08/2019
	Signed:  Date: 12/09/2017

Name: Karen Daniels	Job Title: Assistant HR Adviser
Organisation: Edge Hill University	Department: Human Resources
Address: St Helens Road, Ormskirk, L39 4QP	
Tel No: 01695 657 236	Email: karen.daniels@edgehill.ac.uk
Please return the form to the researcher.	

<b>Section 6 - Instructions to applicants</b>	
<i>To be completed by Researcher</i>	
<i>Please indicate which of the following documents are attached to this Research Passport:</i>	
Current curriculum vitae, including details of qualifications, training and professional registration (please use the template C.V. at <a href="http://www.rdforum.nhs.uk/docs/template_cv.doc">http://www.rdforum.nhs.uk/docs/template_cv.doc</a> )	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Researcher's copy of criminal record disclosure. NB where research involves regulated activity with children and/or adults as defined in the Safeguarding Vulnerable Groups Act 2006, as amended (in particular by the Protection of Freedoms Act 2012), the disclosure must include confirmation of a check against the appropriate ISA barred list(s).	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Evidence of occupational health screening / clearance	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Appendix – List of projects and amendments	Appendix numbers:  N/A <input checked="" type="checkbox"/>

*Please send the completed form and original documents to the Lead R&D office. The completed form and original documents will be returned to you. This package of documents will be used to validate your completed Research Passport form. You may then, and where relevant, provide the Research Passport to other NHS organisations.*

**You must inform all NHS organisations that have received this Research Passport of any changes to the information supplied above. Failure to do so may result in withdrawal of your honorary research contract or letter of access. As part of the quality control procedures for the Research Passport, random checks on the accuracy of the information held on this Research Passport may be made.**

<b>Section 7</b>			
<b>This section should be completed by HR in the Lead NHS organisation, only if additional checks are undertaken</b>			
The following additional checks have been completed:			
Having confirmed that the necessary additional pre-engagement checks have been completed, I am satisfied that the above named researcher is suitable to carry out the duties associated with their research activity outlined in this Research Passport.			
Signed:		Date:	
Name:		Job Title:	
Organisation:		Department:	
Email:			
<b>Section 8 - For Office Use Only</b>			
<i>This section should be completed by the NHS R&amp;D office that received the initial application. The NHS R&amp;D office must countersign and date retained photocopies of the documents. The grey section must be completed before the form is returned to the applicant.</i>			
CV reviewed?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Training?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Evidence of qualifications?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Appendix pages reviewed?	Numbers:
Professional registration details reviewed?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Occupational health clearance reviewed?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Criminal record disclosure reviewed?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Date of disclosure: Disclosure No:	
For regulated activity as defined in the Safeguarding Vulnerable Groups Act 2006, as amended (in particular by the Protection of Freedoms Act 2012), did the criminal record disclosure confirm a satisfactory check against the appropriate ISA barred list(s)			Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Enter Electronic Staff Record Number (if issued):			
Confirmation of valid Research Passport:			
Project specific <input type="checkbox"/> Three-year <input type="checkbox"/> Other End date <input type="checkbox"/> Date:			
Signed:		Date:	
Name:			
NHS Organisation Name and contact details			
Date Honorary Research Contract/letter of access issued (delete as appropriate)			



Has the Research Passport been validated by a Lead NHS organisation and is this validation acceptable to this NHS organisation? Yes ☐ No ☐

CV reviewed?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Training?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Evidence of qualifications?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Appendix pages reviewed?	Numbers:
Professional Registration details reviewed?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Occupational health clearance reviewed?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Criminal record disclosure reviewed?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Date of disclosure: Disclosure No:	
For regulated activity as defined in the <b>Safeguarding Vulnerable Groups Act 2006, as amended by the Protection of Freedoms Act 2012</b> , did the <b>criminal record</b> disclosure confirm a satisfactory check against the appropriate ISA barred list(s)			Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Checked Electronic Staff Record: Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>			
Signed:		Date:	
Name:			
NHS organisation name and contact details:			
Date honorary research contract/letter of access issued ( <i>delete as appropriate</i> )			

**Passport Appendix. List of projects and amendments**

Appendix Number:

*If you are applying for a three-year Research Passport, please use this section to enter details of projects and activities that will be covered by this Research Passport. Once you have a validated Research Passport, you may add details of subsequent projects during the three years that this Research Passport is valid.*

*If you are applying for a project-specific Research Passport, but need to add further sites to the project, please enter the details below.*

*Whenever you add further details, the full Research Passport and accompanying documents must be submitted to the relevant NHS organisations.*

Title:		Start Date:	End Date:
NHS organisation(s):	Dept(s):	Proposed research activities:	Manager in NHS organisation:

**Amendments to the Research Passport**

*Please state what these are, e.g. they might be a change in name or employment details, or a change in research activities.*

*Please check with the NHS organisation where you are undertaking your research if you are unsure whether you will need to submit new evidence of pre-engagement checks on a new Research Passport form, which will need to be validated by the NHS organisation(s) hosting your research.*

Date	Old Details	New Details	Office use only NHS R&D contact details and signature

**To add more projects please copy this page or download further blank pages. Each appendix page should be numbered.**

*For office use only:*

*A photocopy of the appendix should be retained whenever any amendments or additions to the appendix are made.*

## Appendix H: Consent Form

### Edge Hill University

*An exploration of the perceptions of patient safety within the NHS ambulance services.*

#### Research Consent Form

**Principal Researcher:** Keegan Shepard (PhD Student) - Edge Hill University

**Please Initial Box**

- I **confirm** that I have read and fully understand the information sheet dated (version.....) for the above study. I have had the opportunity and time to review the information and to ask questions that were later answered to my satisfaction (if applicable).
- I **understand** that my participation is voluntary and that I can (upon request) be withdrawn from the study before or during the interview. My withdrawal does not require a reason, and I can withdraw up to seven days after the interview has taken place.
- I **understand** that the interview will be recorded with digital audio technology.
- I **understand** that the results of the study will be published and presented in an anonymous format (i.e. no names or identifying details included). If any direct quotes from the interview are used, they will be anonymised to protect your identity.
- I **understand** that the information I provide may be used to support future research, and I agree for my data to be shared anonymously with other researchers.
- I **understand** that data collected during the study, may be looked at by individuals from regulatory authorities or from the NHS Trust, where it is relevant. I give permission for these individuals to have access to my anonymised data.
- I **agree** to take part in the above study.

☐☐☐☐☐☐☐

\_\_\_\_\_  
**Name of Participant**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Name of Witness (If applicable)**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Signature**

*Keegan Shepard - Version 2: May 2017*

Edge Hill University

_____	_____	_____
<b>Name of Researcher</b>	<b>Date</b>	<b>Signature</b>
<i>When completed, 1 for interviewee, 1 for researcher</i>		

## Appendix I: Participant Information Sheet

### Edge Hill University

*An exploration of the perceptions of patient safety within the NHS ambulance services.*

#### Participant Information Sheet

**Principal Researcher:** Keegan Shepard (PhD Student) - Edge Hill University

Dear Sir/Madam,

You are being invited to take part in a research project that aims to explore the perceptions of patient safety by staff within the NHS ambulance services in England. Prior to making a decision on whether to participate or not, it is very important that you are aware of the research project and fully understand what would be expected of you as a participant. The researcher asks that you would please read the rest of the form in its entirety. If you have any concerns or further questions about the project or your participation, feel free to contact the researcher directly and they will be more than happy to discuss it further.

#### **What is the purpose of the study?**

The purpose of this study is to explore the perceptions of patient safety amongst staff in three English Ambulance Service NHS Trusts.

#### **Who is organising and funding the research and why?**

This study is supported by Edge Hill University. The researcher on this project is Keegan Shepard, a PhD student and Graduate Teaching Assistant at Edge Hill University in the Faculty of Health and Social Care. Keegan will have the support of the following supervisors during the study:

- **Professor Sally Spencer** (Director of Studies) - Edge Hill University
- **Dr Carol Kelly** - Edge Hill University
- **Professor Paresh Wankhade** - Edge Hill University

#### **Why have I been invited to take part?**

You have been asked to be a part of this study because you are currently employed by one of the three Ambulance Service NHS Trusts in England that are participating in this research. The researcher would like to interview you concerning your perceptions of patient safety within the ambulance services.

#### **Do I have to take part?**

No, you are under no obligation to participate in the study.

#### **What will happen if I agree to take part?**

*Keegan Shepard - Version 2: May 2017*

## Edge Hill University

If you agree to join the study, you will be asked to give formal consent to participate in a face to face semi-structured interview with the researcher. If scheduling a convenient time to meet face to face proves difficult, the researcher is willing to conduct an interview via telephone or through video conferencing software such as Skype. The interview should not last more than 60 minutes in total. If your interview lasts longer than 60 minutes, the researcher will give you the option to take a break, or to schedule another time and date to complete the interview. The interview will be conducted in a quiet and confidential environment at a time and place that is convenient for you. The interview will be audio recorded and the researcher may also take written notes. The audio recording will allow the researcher to transcribe exactly what was said during the interview, and will ensure that nothing was forgotten or misremembered.

### **Once I take part, am I able to change my mind?**

Yes, you can change your mind about taking part in this study at any point during the interview without giving a reason. You do not have to discuss any topics that you are uncomfortable with. After the interview is completed, you will have the following seven days to withdraw from the study before the data analysis begins. If you choose to withdraw during this time, the data collected from your interview will be immediately and securely destroyed.

### **How long will it take as a participant?**

Approximately 60 minutes in total.

### **What personal information will be required from me?**

The researcher will request the following demographic information from you: gender, age, nationality, professional role, duration of employment, Ambulance Service NHS Trust and your level of education achieved. This demographic information is necessary as the research aims to explore and compare participant groups. The researcher will ask you for this information in the interview, and your responses will be audio recorded with your permission. These recordings will be stored safely and securely until the researcher fully and accurately transcribes them, after which the researcher will dispose of them.

### **Are there any risks in participating?**

If you feel uncomfortable with the interview at any point, the researcher will stop and offer an opportunity to take a break and continue or to conclude the interview at that point. If the interview causes you distress in any way, the researcher will direct you towards a suitable support setting, including the staff counselling services offered within your NHS Trust.

### **What are the potential benefits to participating?**

Very little is known about patient safety practices, perceptions and safety culture in the ambulance services. Your contribution will provide a more in-depth understanding of these topics, inform further research and will potentially identify ways to improve future patient safety policy and practice.



## Edge Hill University

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### **Will my participation be confidential?**

Yes, your participation will be kept strictly confidential and all data collected from the interview will be anonymised. Audio recordings and original notes will be securely stored until they are anonymised, transcribed and subsequently destroyed. You will be assigned a unique study identification number that will be used when discussing your responses. Any personalised information, such as your role, responsibilities, experiences, and your NHS Trust, will be anonymised. All data will be stored on password-protected servers provided by Edge Hill University and their IT Services department in accordance with the University's Data Management and Sharing policy.

Your signed consent forms will be scanned and stored on a password-protected Edge Hill University server separately from the rest of the collected data. Direct quotes and themes may be used by the researcher for the study, but it will not be possible to identify you personally as the proper steps will be taken to protect the anonymity of each participant. The researcher will adhere to the policies at Edge Hill University in conjunction with the Data Protection Act 1998 for procedures concerning the handling, processing, storing and destroying the collected data. In accordance with the Data Protection Act 1988 and Edge Hill University data storage policies, the data will be securely stored for a period of ten years before being securely destroyed.

If a disclosure over the course of the interview is made that could be considered to represent unsafe professional practice or illegal activity, the researcher will discuss this in detail with you. Depending on the context and level of severity, the researcher may need to report this to the appropriate individual(s) at the participating NHS Trust and Edge Hill University.

### **What will happen to the information I provide?**

All of the information that you provide will be used to complete the researcher's PhD dissertation. The work from this research will also be published in academic journals as well as presented at conferences and events. After the study is finished, the researcher will send a summary of the results to each participant, in addition to thanking them for their contribution. The information you provide may be used to support future research, and your anonymised data may be shared with other researchers in the future.

### **Who has reviewed the research project?**

This study has been reviewed and approved by the Faculty of Health and Social Care Research Ethics Committee at Edge Hill University, and the Health Research Authority, ID number: XXXXXXXX.

### **What if there is a problem?**

You can contact the researcher or the main research supervisor using the contact details below. If you would prefer to talk to someone independent from the direct research team, you can contact the Associate Dean for Research and Innovation in the

## Edge Hill University

Faculty of Health and Social Care at Edge Hill University, Professor Clare Austin. She can be reached at either 01695 650772 or [austincl@edgehill.ac.uk](mailto:austincl@edgehill.ac.uk).

### **Researcher Contact Details**

Keegan Shepard  
Room H116  
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Faculty of Health & Social Care  
St Helens Road, Ormskirk  
L39 4QP  
Tel: 01695 650960  
Email: [shepardk@edgehill.ac.uk](mailto:shepardk@edgehill.ac.uk)

### **Director of Clinical Research Contact Details**

Professor Sally Spencer  
Postgraduate Medical Institute  
Edge Hill University  
Ormskirk  
L39 4QP  
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Email: [sally.spencer@edgehill.ac.uk](mailto:sally.spencer@edgehill.ac.uk)



## Appendix J: Participant Invitation Letter

### Edge Hill University

*An exploration of the perceptions of patient safety within the NHS ambulance services.*

#### **Participant Invitation Letter**

Dear Sir/Madam,

I am conducting a PhD research project with Edge Hill University that aims to explore the perceptions of patient safety by staff members in the NHS ambulance services. I will be collecting the data for this research by conducting interviews with staff from all levels within your organisation.

You have received a participant information sheet and consent form, which explain the study and its participant requirements in more detail. I would ask that you please take the time to read these documents carefully before making a decision about your participation. If you are interested in taking part in this research and have any questions or would like any further information, please feel free to contact me using the details below.

This research project has been reviewed and approved by the Faculty of Health and Social Care Research Ethics Committee (FREC) at Edge Hill University and the Health Research Authority (HRA).

Many thanks for taking the time to read this.

Kind regards,



Keegan Shepard  
PhD Student and Graduate Teaching Assistant  
Room H116  
Faculty of Health and Social Care  
Edge Hill University  
St Helens Road, Ormskirk  
L39 4QP  
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Email: shepardk@edgehill.ac.uk

## Appendix K: Example of Initial Transcript Coding and Analysis

*Focused on learning / sharing knowledge / informal debriefing*  
*Soft spoken - large org shift after WestMids*  
*Prefers RIBS / Not emails - can be missed*  
*Smaller stations miss information / comms - never see anyone*  
*Reporting culture massively improved but still needs work - misdirecting services*

**C3-T3 - Paramedic**  
 Age: 25-30 - Gender: Female - Nationality: British - Professional Role: Paramedic - Duration of Employment: 5 - 10 years - Level of Education Achieved: Bachelors in Paramedic Science

**I: What is your interpretation of patient safety within the NHS Ambulance Services?**  
 P: We have a responsibility to try and protect patients from coming to any harm. *Harm focused interp. Responsibility for care.*

**I: What is your perception of a patient safety culture within [NHS Trust T3]?**  
 P: Yes I think it's a culture that's got a lot better than it used to be, so I think there's a little bit more awareness about... like there's a little bit more training around specific patient safety incidents on like mandatory training courses. And like there's a little bit more about it on the paramedic degree courses. I think the culture is a lot better. I think the culture of reporting incidents to improve and prevent future patient safety incidents, is a lot better than it ever used to be. I think there's a perception that reporting any sort of patient safety issue is like beneficial to everyone now. I think people are less anxious to report things, and I think it is an issue that people are a little more aware of than they potentially used to be like a few years ago. *Shift in PSC*

**I: Having worked for the services for around 7 years, have you seen this reporting culture kind of shift, and what do you see as the main drivers behind this shift?**  
 P: I think the major like organisational culture shift was after like WestMids and that sort of situation, and also following changing like reporting procedures that we had, which really didn't used to have any prior to WestMids. And then also the big focus on like a message from management or higher-up on making sure staff felt safe to report things, and trying to see any mistakes not as something that would make somebody lose their jobs or anything like that, but something that people could learn from, like at an organisational level. And so there was like a magazine thing that gets put out every quarter about... *Timeline of shift*

**I: Is that insight?**  
 P: Yeah, about like good and bad incidents that people can learn from, which includes like 'what happened to the person that the incident occurred with?', and they had extra training or they did a reflective practice to emphasise that there's not a blame thing, it's just like a learning thing. Does that seem okay?

**I: Yeah, is there a blame culture within certain subsets of the operational workforce?**  
 P: Yeah, I don't think it's like 100% gone. I think there is still a bit of fear culture, a little bit, especially on the people that this is all new for. I think it's a lot less so for the new people coming through now, but definitely people that have been like in the job for a while, just because I think, even from before when I started, people had some really bad experiences, so I think it's just that... and I think it's the kind of organisation where a lot of learning comes through... or perceptions of incidents comes through word of mouth, so I think it's just something that would take time to completely shift it. But like I do think it is a lot better; I've seen like a massive change. And like I've seen people reporting things that people in the past would have gone unreported. But I think definitely for people who have been in the service for just a little bit longer it's just harder, because it's quite a significant change in attitudes that's happened, and obviously people are just a bit... I think there's a little bit of a wariness or mistrust of reporting, that they might get in trouble. *Existing fear of reporting.*

**I: What would you say are the most significant risks to patient safety that you see?**  
 P: Um... like practical risks or...

**I: Risks facing patients on a day to day basis, or risks facing the overall organisation?**  
 P: Like drug errors and things like that?

**I: It can be anything you feel that is important.**

*Reporting culture from blame to open culture*  
*Lack of reporting in WestMids*  
*Learning culture and culture of support*  
*Blue culture - older staff*  
*Bad experiences still disguised by staff*

P: Yeah so I guess drug errors. Delayed response times, like really long waits without enough like checking in on people if they've waited for a really long time. The busier it gets, the less checks people get because it's so busy, and people don't have time to ring the patients back, so it's like an extremely prolonged wait when it's busy. I guess like a promotion of hospital avoidance, can sometimes be a risk to patients who might be left at home, who might need to go to hospital, which is like a perceived perception I think, partly, because it's gonna be busy at hospitals and you're trying to protect other patients by not taking another one in. And also like an actual thing where the training's changed and there is more emphasis to leave people at home, like when possible and when safe. And I guess a lack of places to refer patients to when you do leave them at home. So there's a lack of safety netting sometimes.

Demand →  
Delays  
Non-converge  
and drug errors

I: Yeah because you guys have a lot of social work responsibilities now.

P: Yeah, definitely, especially for mental health, I think they're a group of patients that are a huge risk for us, so patients who don't want to go to hospital, but like with a mental health presentation, but then there's basically like nowhere to refer them to. They're a big high risk group, I think, of patients.

Lack of resources in wider HC system

I: What would be your interpretation of organisational wide patient safety risks, for example, demand or whatever comes to you mind?

P: Yeah, like high call volume, or lack of resources I guess in general, so like just the fact that people don't get an ambulance for a long time or sometimes ever.

Demand  
↓  
Resources

I: And do you see that getting better in future?

P: I'm honestly not sure. It's got a lot worse, like recently. So hopefully I hope it's something that will get better, but I'm not sure, I really don't know.

Demand is growing impact on things above ↑

I: So you touched upon organisational culture like right in the beginning. How do you think that influences patient safety within the services?

RC shift → positive impact on PS

P: So I think that the reporting culture has got better, has helped patient safety. Just because obviously hopefully now people learn from other people's mistakes. There's more information sharing, so you just never used to know things that happened. So they'd get repeated all the time, because no one ever knew there was an issue with anything, and so I think that's improved it.

I: Are there any other ways to improve organisational culture within the services to have a positive impact on patient safety?

Culture of support → Needs time as well for staff to digest/trust

P: Um... I think it's really difficult for them (management and executive) because I think they've kind of saturated the message that like reporting's really good and like it's a supportive thing. And I just think it needs to take time for people to have to be reporting things, which is a little better, and then to pass on to other people probably by word of mouth that something's happened, they reported it, and they didn't get into trouble and it was fine and they learned from it. Like at an organisation-level, it's been that 'something's changed', just to pass that on to other people because I think that's... like people can hear all the time from management that reporting's good, but sometimes there's a bit of a lack of trust in that. So I don't know if it is an actual thing that can be done, or if it's a bit of a time thing.

Communication channels

Distrust of Mgt

I: Is there any time for team communication or team bonding now with the demand so high where this kind of information could be passed down from staff member to staff member? Like do you ever see managers or teammates back at the station in [Omitted - Location]?

P: Yeah, so there's not like a formal team structure at all. I think it would be good to have like actual teams of people who you were on a similar rota to, and then you have a team leader, and you could have like discussion days and like events and learning from other people's jobs and things, which doesn't happen. There is a bit of it now, but it's all in everyone's own time, so there's like CPD events where people present cases and what their learning was from them. Yeah, like at a more informal level, that's something that would be really good to have. And there is like a good... there's like a better debrief culture than there used to be. Like if you do a job with some of like the Advanced Paramedics, they'll debrief every job, and they try and encourage people, like when people are mentoring students, they try and encourage like a 5-minute debrief after every single job. But I think if that was a little bit more widespread thing that happened, a bit more regularly, that would probably help.

Lack of team-learning structure

Debrief → improvements to learning from jobs and encouraging knowledge transfer

Increased learning culture



Communication missing staff  
- Need different pathways to reach all staff.

Never see Mgt  
- Nature of role  
- Increased demand

I: Do you guys get adequately fed back information around patient safety changes from management and executive level staff?

Bad feedback, but improving

P: It's not great. I think it's better than it used to be. I think it's difficult for them to just pass information down, because we don't ever see any management, especially people who work on smaller stations who don't have any management on their station, who just won't see anyone for like a really really long time. So they do try with like emails and bulletins and things, which you can very easily miss if you're on a shift or off work for a couple of weeks and you just miss it all. So I think it is better, but I am lucky from like a main station. Like we see management. But I know like, if you're someone who's on relief or if you're in a small station, people never see anyone. So even if they hear something, they don't really have an opportunity to find out anymore about it. So there's a lot of hearsay that goes on, I think, which doesn't help. It is difficult! I don't know how they can make it better.

Missing comm- emails

I: What's your preferred method of receiving communication around patient safety from management or executive level staff?

Overload

P: I like the RIB, that they do every week, which is like a little information bulletin, which I think is good. That's my main thing. I don't mind getting emails. We get like a lot of emails. Like I read the RIB all the time. Sometimes they put bulletins out and you just completely miss them. Like you don't get an email about it and it just goes to the bottom of a thing and you just don't see it. But I haven't really used my iPad so much since we got it. But I think they... I think in the future hopefully that'll be a good way of learning, like, getting information.

Can't preference

I: I feel a recurring theme of people not using their iPads. Is there a reason for this?

Mentioned many times

Unsure of use → Need training → should have PRFs

P: (laugh) To be honest I think it's because people don't... everyone just got given them and there wasn't very much help for people and what they do. And I think at the moment, it's just seen as an extra thing to take into a house, which probably isn't going to be that useful because they don't have much on them at the minute. I think maybe when they get PRFs on them, people will find them a bit better. I'm not really sure, because it's not even... like I don't mind technology and I just haven't like I've got it out a handful of times. But I think they could be really good, but there needs to be a bit more training on what people can use them for. It is really random, because everyone was so excited when we got them, and now everyone's just not... Honestly it's just people putting them out of their bag.

I: Some of the people I've talked to were a bit younger and didn't use the iPad and used their phones and things like that. Do other operational staff use them at all?

Younger staff using phones a lot in place of iPads

P: Um... I think a lot of people have the links on their phone, and there really isn't anything you need it else for unless you go to an end of life care job, and then you can go and get it. And I think there's a group of people who aren't very comfortable with technology or iPads, and it's just an extra thing to have to remember passwords for, and then you know, like it's not that intuitive for people that don't really know iPads. And I think there's been quite a lot of problems with them and people just tend to give up I think. A couple of people's reset, and then they just left it and decided 'well, that's it now' (laughs).

Technology barriers → uncomfortable

I: I heard you can soon use Datix with them, right?

P: I don't know actually, probably? I'm so bad, I wondered this yesterday. I'm not sure.

I: Do you think people will start using them more regularly when electronic PRFs come through?

P: Definitely, and I think it will because you wouldn't take them into someone's house now, because there's really not any point and you could always go and get it. And it's a bit long to go and get it and so people just do what they normally do. If you needed to take it in because it had the PRF on it or other stuff on it, I think people would do it more. It's really slow to change in [NHS Trust T3], as well, I don't know if you might have got that vibe. So I wonder if it's just that as well where people are a little bit resistant to do it. And I reckon once loads of new people come through and bring them in all the time, it will probably change a bit.

Slow change

I: What would you say some of the barriers to patient safety are within the services?

Blue for positive barriers → Preventing reporting

P: Um I think there is still a little bit of a fear perception of a... not a blame culture, but just of getting in... reporting something and then getting in a lot of trouble or getting in trouble for it. So I think that prevents some reporting, so I guess that prevents like learning and potentially stops chances to improve patient safety. Um... I guess like some of the risks of not having ambulances and stuff... there's like physical barriers to it, like the lack of staff and the high call volume, and like the physical inability to send people. I think maybe a

Far prevents learning

Resource/demand mismatch barriers

Lack of awareness  
 Hypothesis <sup>orthodox</sup> singular  
 incidents w/o perspective  
 of incidents as a whole.

Large impact / Demonstrate  
 to staff

little bit of a lack of awareness as to how reporting patient safety incidents can actually have a really big impact, and people just seeing it as an isolated small incident rather than looking at the bigger picture and thinking 'if it's reported, it could make a big difference', because it probably isn't one instance, it probably happens all the time if it happened once. I can't really think of anything else, is that bad?

I: One more little one. What do you consider to be the current knowledge gaps with patient safety, like what do you think executive level staff should be focussing on that they aren't, but that operational staff are very concerned about?

P: I would say like lack of kit to do the job right to help patients. So like problems with the manual handling kit to lift patients from the floor. We have this like inflatable cushion thing that like never works, so that is a big patient safety risk that gets Datixed a lot. And I think people feel like it's a patient safety thing and a crew safety thing that doesn't get looked into. I don't know really, what else. Like I guess sometimes the categorisation system which categories calls that leaves like elderly fallers as a low category, so it leave vulnerable people on the floor for quite a long time and things like that, that people feed back on, but they don't feel like it's something that gets changed or listened to I guess.

I: How would you improve the call-taking to make it safer for patients?

P: Having the clinical hub a bit better staffed, so even if they...because they're the calls if they're really busy, they'll just sit in a box and not get looked at until someone can call them back. So even better staffing, like clinical staffing control who can like flag calls earlier on. Especially as when it's busy, everything just gets to be such a huge risk to people

Lack of kit  
 - staff like but  
 no changes (for safety?)  
 EOC trying to algorithm learn vulnerable as low priority

- Clinical staff in EOC  
 - Safer allocation of resources /  
 especially w/ increase demand

## Appendix L: Completed COREQ Checklist

### COREQ (Consolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
<b>Domain 1: Research team and reflexivity</b>			
<i>Personal characteristics</i>			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	X
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	X
Occupation	3	What was their occupation at the time of the study?	X
Gender	4	Was the researcher male or female?	N/A
Experience and training	5	What experience or training did the researcher have?	X
<i>Relationship with participants</i>			
Relationship established	6	Was a relationship established prior to study commencement?	X
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	X
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	X
<b>Domain 2: Study design</b>			
<i>Theoretical framework</i>			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	X
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	X
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	X
Sample size	12	How many participants were in the study?	X
Non-participation	13	How many people refused to participate or dropped out? Reasons?	N/A
<i>Setting</i>			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	X
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	X
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	X
<i>Data collection</i>			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	X
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	X
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	X
Field notes	20	Were field notes made during and/or after the inter view or focus group?	X
Duration	21	What was the duration of the inter views or focus group?	X
Data saturation	22	Was data saturation discussed?	X
Transcripts returned	23	Were transcripts returned to participants for comment and/or	X

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
<b>Domain 3: analysis and findings</b>			
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	X
Description of the coding tree	25	Did authors provide a description of the coding tree?	X
Derivation of themes	26	Were themes identified in advance or derived from the data?	X
Software	27	What software, if applicable, was used to manage the data?	X
Participant checking	28	Did participants provide feedback on the findings?	X
<i>Reporting</i>			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	X
Data and findings consistent	30	Was there consistency between the data presented and the findings?	X
Clarity of major themes	31	Were major themes clearly presented in the findings?	X
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	X

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.



**Appendix M: Example of Reviewing Participant Representation of Each Dominant and Subdominant Theme per Organisational Level and NHS Trust (Ongoing Analysis)**

Dominant Themes	Subdominant Themes	Executive			Management			Operational		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
Interpretation	• Systemic	4	2	2	4	3	3	-	-	1
	• Immediate Patient Safety	-	1	-	1	1	1	4	4	6
Significant Patient Safety Risks	External:									
	• Demand	3	3	2	4	2	4	3	3	5
	• Non-Emergency Use	2	-	-	3	-	-	2	5	4
	• Delayed Care	3	1	1	3	-	-	1	2	3
	Internal:									
	• Human Factors	2	2	1	2	4	2	5	3	5
	• Triaging and EOC Clinical Knowledge	4	2	1	3	1	2	3	3	3
	• Performance Culture	3	2	1	1	1	-	1	-	2
Reporting Culture	• Historically Negative	2	2	3	3	3	5	4	4	3
	• Modernly Positive	4	3	3	5	4	5	5	5	7
Communication	Barriers									
	• Mobile Workforce	4	2	2	3	3	3	1	4	1
	• Neglected Channels	1	1	1	3	4	2	2	1	4
	• No Time	-	-	1	4	2	2	3	2	4
	• IT Infrastructure	1	1	2	4	3	3	-	2	4
	Solutions									
	• Technological	4	2	3	4	4	5	1	1	5
Organisational Culture	• Multifaceted Approach	2	3	1	2	2	2	2	3	-
	Barriers to Improve									
	• Organisational Divide	3	1	3	5	2	3	5	5	5
	• Historic Remnants	2	2	1	6	3	2	2	3	2
	Solutions									
	• Developing a Learning Culture	4	3	3	6	5	3	4	3	4
	• Role Appreciation	1	2	3	3	1	2	2	4	3
	• Leadership	3	2	1	4	1	2	2	1	-



**Appendix N: Examples of Reviewing Participant Representation of Each Dominant and Subdominant Theme per Organisational Level and NHS Trust (Finished Analysis)**

<b><i>Comparison Between All Organisational Levels in All NHS Trusts</i></b>		<b>Executive</b>			<b>Management</b>			<b>Operational</b>		
<b>Dominant Themes</b>	<b>Subdominant Themes</b>	<b>T1 (*4)</b>	<b>T2 (*3)</b>	<b>T3 (*3)</b>	<b>T1 (*6)</b>	<b>T2 (*5)</b>	<b>T3 (*5)</b>	<b>T1 (*5)</b>	<b>T2 (*6)</b>	<b>T3 (*7)</b>
Interpretation	Systemic	4	2	2	4	3	3	-	-	1
	Immediate Patient Safety	-	1	-	1	1	1	4	4	6
Significant Patient Safety Risks	Service Demand Pressures	4	3	2	6	5	4	4	6	7
	Triaging	4	2	2	3	1	2	4	3	3
	Lack of Training and Desking	3	1	2	5	2	1	4	4	4
Reporting Culture Shift	Historically Inadequate	2	2	3	3	3	5	4	4	3
	Getting Better	4	3	3	5	4	5	5	5	7
Communication	Infrastructural Resources	4	3	3	5	5	5	3	5	6
	Workforce Resources	4	2	2	5	3	3	4	5	4
Organisational Culture	Organisational and Cultural Legacy	3	2	3	6	5	3	5	6	6
	Becoming a Learning Organisation	4	3	3	6	5	5	5	6	7

**\*Number of Total Participants in Individual Categories**

<b>Comparison Between All Organisational Levels in All NHS Trusts</b>		<b>Trust T1</b>			<b>Trust T2</b>			<b>Trust T3</b>		
<b>Dominant Themes</b>	<b>Subdominant Themes</b>	<b>Exec (*4)</b>	<b>Mngt (*6)</b>	<b>Oper (*5)</b>	<b>Exec (*3)</b>	<b>Mngt (*5)</b>	<b>Oper (*6)</b>	<b>Exec (*3)</b>	<b>Mngt (*5)</b>	<b>Oper (*7)</b>
Interpretation	Systemic	4	4	-	2	3	-	2	3	1
	Immediate Patient Safety	-	1	4	1	1	4	-	1	6
Significant Patient Safety Risks	Service Demand Pressures	4	6	4	3	5	6	2	4	7
	Triaging	4	3	4	2	1	3	2	2	3
	Lack of Training and Desking	3	5	4	1	2	4	2	1	4
Reporting Culture Shift	Historically Inadequate	2	3	4	2	3	4	3	5	3
	Getting Better	4	5	5	3	4	5	3	5	7
Communication	Infrastructural Resources	4	5	3	3	5	5	3	5	6
	Workforce Resources	4	5	4	2	3	5	2	3	4
Organisational Culture	Organisational and Cultural Legacy	3	6	5	2	5	6	3	3	6
	Becoming a Learning Organisation	4	6	5	3	5	6	3	5	7

**\*Number of Total Participants in Individual Categories**

## Appendix O: Example of Notes Taken During and After Interviews

"For whatever reason" <sup>Chronic</sup> ~~Do more signal by hands~~  
 Money  
 Scams, incidents are very random  
 Low levels are where you see the most accidents  
 - Should be put severe  
 [redacted] in ambulance culture, [redacted] nurse and then paramedic, Clinician!  
 Was in a quiet office, no distractions. [redacted] and the [redacted] I've talked to yet. "Focus is too much on severe PSIs ~~which~~ that are outliers and can't be prevented, while not focussing on moderate and low PSIs that happen a lot and because of systemic <sup>problems</sup> in the organization." - Too much use of "sexy new things like 'quality improved' and other various terminology that front-line staff don't give a shit about, need to put it in plain human terminology.  
 115 external riders in a weekend  
 When it'd be 1 or 3M  
 external organization.  
 Plain English, no sexy terms like "quality improved" as front-line staff don't give a shit - too wishy washy

Visualize  
▼

Code  
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Auto Code

Range Code

Unicode  
▼

Case Classification  
▼

File Classification  
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Detail View  
▼

Sort By  
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Undock

Navigation View

List View  
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Find

explore

Coding

Classification

Workspace

Codes	References	Modified On
	48	106 28/06/2019 12:21
	60	132 28/06/2019 12:21
	69	191 28/06/2019 12:23
	47	94 19/02/2019 11:44
	58	160 15/04/2019 09:48
	75	181 31/05/2019 10:16
	44	79 22/05/2019 14:20
	69	191 14/09/2018 10:02
	47	117 29/05/2019 14:20
	44	84 29/05/2019 13:08
	64	148 07/09/2018 09:46
	33	87 23/05/2019 12:44
	41	70 07/09/2018 09:46
	70	251 31/05/2019 13:37
	57	109 31/05/2019 13:37
	63	187 24/09/2018 14:48
	54	192 07/09/2018 09:46

Document Properties
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General
Attribute Values

Name

A4-T1

Description

They might have been more of a high management participant, as they had only recently shifted [REDACTED] or. They [REDACTED] and so their responses sometimes mirrored each other. Extremely

Location

Files

Size

22 KB

Color

None

Created On

14/09/2018 15:38

By

KCS

Modified On

28/06/2019 12:23

By

KCS

OK

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Summary

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Layout

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Annotations

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View

Coding Stripes

Highlight

	A : Communication	B : Organisational Culture	C : Reporting Culture Shift	D : Significant Patient Safety Risks	E : Varied Interpretation of Patient Safety
1 : A1-T1	you can never ever best having people having it and face never be you can't roamed an ambulance damned	Culture is like a web, isn't it, so there's a we never had the experience where		Delays is getting to patients and patients It's throughout everything we do really,	
2 : A1-T2	now in fact we go to hospitals and wait for them to come there, because it's pushing the professional requirement	we can see more at terms or how we learn whenever from things and do that. we look for individual learning and	when I came here eleven years ago, if	it feels like the delay is built into things, the demand/resource mismatch. So it's	there's individual and there's population
3 : A2-T1	piece, of parameters keep this  when you medicine doctors updates right thing want to and have encouraged in this in an emergency department where it's done very same get communi-	background, because they've not a if you have a values-driven organisation	In the last two years, we report much more	departments can't manage their demand we also need to have measures to say	The Board are more interested in patient there's immediate patient safety, where
4 : A2-T3	you have some who staff so applies to  have been that function that as an shift we send people out on their own, in an ambulance before, support  they just stations	tends to be created in the same way If I put on a uniform and go around as an	we don't have a culture of reporting we didn't have a culture of reporting	The volume of patients	safety is looking at any harm or potential
5 : A3-T1	going to engage with all staff is difficult  we are really go techniques  staff and emails, s  I also th understand How do patient safety across such a huge	so what we do is we gather all incidents  we report minor things and we're actually	our ambulance service is under enormous	it's not just the incident, it's a long-term	

Code At

Enter node name (CTRL+Q)





## Appendix S: Example of Journal Entries for Reflexivity

3/11/17

I'm transcribing my seventh interview, and I'm just realising how sensitive these Dictaphones are. While the participant found a quiet room ~~for~~ for our interview, it was next to a busy hallway, which I assumed would be fine. However, every time someone walked by, or let a door slam, I am having a hard time hearing what the participant said. Future reference, make sure it's incredibly quiet everywhere, as this transcription has taken almost the entire day!

14/12/17

Largely finished interviewing at [redacted] and am now recruiting for the second. People warned me about winter pressures, and they were not kidding. While I am in contact w/ the research paramedic, they have just been completely honest and told me that I will need to hold off for a little bit (possibly until Feb!!). It's frustrating, but also more than fair as their jobs are busy enough without me asking for their time - stresses of researching health professionals as extra time needs to be built in for everything. Will try to get some writing done in the meantime and capture the beginning stages of analysis!